KEMENTERIAN PENGAJIAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

e-BOOK
PSA INOVATION TECHNOLOGY AND COMMERCIALIZATION (PITEC 2.0)

PITEC
PSA INNOVATION TECHNOLOGY & COMMERCIALIZATION

2022

Innovation • Accelerates • Transformation TVET

e-Book

PSA INNOVATION TECHNOLOGY AND COMMERCIALIZATION (PITEC 2.0)

PITEC

PSA INNOVATION TECHNOLOGY & COMMERCIALIZATION

2022

Innovation . Accelerates . Transformation TVET

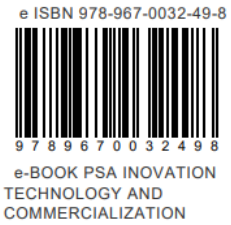
MINGGU
TVET
NEGARA
2022

First published in 2022

e-Book

PSA INNOVATION TECHNOLOGY AND COMMERCIALIZATION (PITEC 2.0)

e-Book
PSA INNOVATION TECHNOLOGY AND COMMERCIALIZATION (PITEC 2.0)



eISBN No: 978-967-0032-49-8

First Published in 2022 by:

UNIT PENERBITAN
Politeknik Sultan Salahuddin Abdul Aziz Shah
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
Selangor

Telephone No. : 03 8888 3511
Fax No. : 03 5569 1903

PREFACE

DR. MOHD ZAHARI BIN ISMAIL
DIRECTOR OF
POLYTECHNIC SULTAN SALAHUDDIN ABDUL
AZIZ SHAH

السلام عليكم ورحمة الله وبركاته

Salam Sejahtera dan Salam Keluarga Malaysia.

Alhamdulillah, as much gratitude to Allah SWT for the publication of the book PSA INNOVATION TECHNOLOGY AND COMMERCIALIZATION (PITEC 2.0) YEAR 2022 with the theme INNOVATION ACCELERATES TRANSFORMATION OF TVET.

PITEC 2.0 is an initiative of Polytechnic Sultan Salahuddin Abdul Aziz Shah (PSA) to recognize outstanding students and lecturers in research and innovation. Students' talents can be unearthed, sown and empowered with a culture of innovation and creativity in producing new high - impact products or innovations, especially in technical and social aspects. It is also a platform to produce quality, skilled and marketable graduates in line with the Industrial Revolution 4.0 (IR 4.0) in line with the needs of the industry.

This year, a total of 40 new high – impact products or innovations produced by students and lecturers were selected.

It is hoped that it will be able to contribute to the development of the industry in Malaysia and have an impact on the local community. This can also help to prove to the industry that PSA students are able to stand tall on par with students from other institutions of higher learning.

I also hope that programs and efforts in the shift in innovation like this will continue to be practiced and set an example for future generations. It also needs to be appreciated and applied so that innovative and creative culture continues to be maintained without compromising the balance of other aspects. Look for opportunities to strengthen yourself with knowledge and have the agility (agility) in accepting new technology and quick to learn in an ever -changing environment.
Finally, congratulations to all members of the PITEC 2.0 committee as well as the Research, Innovation and Commercial Center (CRI) as the organizers and all parties involved. Good luck!

Thank you and best regards.

PREFACE

TS. DR. NORANI BINTI ABD KARIM
PROGRAMME DIRECTOR OF PITEC 2.0

Assalamualaikum, Salam Sejahtera and Salam Keluarga Malaysia.

Alhamdulillah, thanks to Allah SWT because by His grace, the e-Book TVET Innovation PSA (PITEC 2.0) has been successfully published this year. Such publications are intended to share the development of activities, especially in the field of research and innovation that have been implemented by students and lecturers of the Polytechnic Sultan Salahuddin Abdul Aziz Shah (PSA) with the outside community.

As we all know, the development of Digital Malaysia and Industrial Revolution 4.0 that is growing in Malaysia will be able to improve new skills to students and project supervisors in order to produce more high-impact innovation projects and successfully commercialized it in future. This positive development will indirectly transform the TVET Education system in Malaysia.

It is hoped that the TVET graduates produced by Malaysian Polytechnic will be able to meet the needs of existing industries as well as new industries that will be developed in Malaysia in the future.

The highest appreciation and thanks are extended to all members of the e-Book Editorial Conference Committee in this edition, as well as all parties involved directly as well as indirectly in the success of this publication. The close cooperation together with the dedication and high commitment of all parties involved is expected to continue in the future.

Finally, I would like to congratulate all the inventors who came from various backgrounds for successfully contributing their research and innovation results. Publishing activities like this can be shared and applied by PSA citizens in particular and the international community in general.

Thank you.

PROJECT TITLE

CIVIL ENGINEERING DEPARTMENT

PROJECT TITLE

CIVIL ENGINEERING DEPARTMENT

PROJECT TITLE

ELECTRICAL ENGINEERING DEPARTMENT

PROJECT TITLE

ELECTRICAL ENGINEERING DEPARTMENT

PROJECT TITLE

MECHANICAL ENGINEERING DEPARTMENT

PROJECT TITLE

MECHANICAL ENGINEERING DEPARTMENT

PROJECT TITLE

COMMERCE DEPARTMENT

ORGANIZING COMMITTEE

PATRON
Dr. Hj. Mohd Zahari bin Ismail
Pengarah

ADVISOR I
Ts. Roseman bin Mat Jidin
Timbalan Pengarah Akademik

ADVISOR II
Ts. Dr. Hj. Ahmad Aftas bin Azman
Timbalan Pengarah Sokongan Akademik

CHAIRMAN
Dr. Hjh. Wan Rosemehah binti Wan Omar
Ketua Pusat Penyelidikan, Inovasi dan Komersial

PROGRAM MANAGER
Ts. Dr. Norani binti Abd Karim

SECRETARY I
Ts. Ilya binti Ismail

SECRETARY II
Pn. Noor Hayati binti Mat Taib
Pn. Nadiah binti Din

ORGANIZING COMMITTEE

FLOOR MANAGER
Pn. Nur Hadiana binti Nasruddin

EMCEE / DOA RECITER
En. Khairol Napisham bin Abd Razak

PROTOCOL & PUBLICITY
Pn. Herlina Ainizawati binti Zakaria
Pn. Norbaiti binti Ridzuan
En. Muhammad Hanif bin Selamat
En. Mohd. Nor Aqmal bin Razali

TECHNICAL & MULTIMEDIA
Ts. Ilya binti Ismail
Pn. Murusinida binti Che Mood
Pn. Siti Hasliana binti Thalji
En. Saiful NIzam bbin Saia
En. Mohd Azrin bin Baharudin
En. Halmi Effendy bin Rasol

SPEECH TEXT PREPARATION
Pn. Mazillah Azleen binti Mazlan
Pn. Yusmina binti Yusof
Pn. Normah binti Abdullah

PREPARATION OF INNOVATION PROJECT & REGISTRATION
Pn. Atikah Fatma binti Mohd Daud
En. Wan Mohd Zamri bin Wan Ab Rahman
Cik Nurfadillah binti Ahmad Mahmud
Pn. Mai Azuna binti Meor Yusof
Pn. Sarah Afzan binti Abdul Karim
En. Muhd Kamal Ariffin bin Hj. Badrun
Pn. Wan Norhidayah binti Wan Mohamed Noor
Pn. Nur Hadiana binti Nasruddin
En. Somchai A?L Enoi
Pn. Nur HIdayah binti Musa

PREPARATION OF COMPETITION RUBRIC
Ts. Dr. Hj. Zunuwanas bin Mohamad
Dr. Hjh. Wan Rosemehah binti Wan Omar
Dr. Siti Khalijah binti Jamal
Dr. Murugadas A?L Ramdas
Dr. Norhidayah binti Mohamed
Pn. Nazrizam binti Ab Wahab
Dr. Marlina binti Ramli
Ts. Ilya binti Ismail
Pn. Aliza binti Abdul Razak

TECHNICAL & REFEREE
Pn. Herliana binti Hassan
Pn. Rabeah Adawiyah binti Hashim
Pn. Faizah binti Ya'acob
Pn. Shariza Azwin binti Yahya
Dr. Murugadas A?L Ramdas

DATA INNOVATION (MYEKSPRO) & INTELECTUAL PROPERTY REGISTRATION
Pn. Aliza binti Abdul Razak
Pn. Atikah Fatma binti Md Daud
Pn. Faiza binti Zahari
Dr. Siti Khalijah binti Jamal
Dr. Murugadas A?L Ramdas

CERTIFICATE PREPARATION
Pn. Sarimah binti Che Hassan
Ts. Nor Hazlin binti Md Gharip
Pn. Akmarya Syukhairilnisah binti Mohd Akhir
Dr. Mohd Elias bin Daud
Pn. Haryanti Abdullah
En. Mohd Firdaus bin Sedet Mohd Aqmal
En. Mohd Nor Aqmal bin Razali

PRIZE PREPARATION
Ts. Dr. Norani binti Abd Karim
Pn. Atikah Fatma binti Md Daud
Pn. Siti Hajar binti Abdul Hamid
Pn. Norliza binti Kassim
Cik Nurfadillah binti Ahmad Mahmud

LANGUAGE REVIEW
Dr. Parameswari A?P Shunmugan
En. Mohd Khalid bin Ustati
Pn. Christina Devi A/P Kulandasamy
Pn. Hazlina binti Harumaini
Pn. Nurul Akmal binti Hassan
Pn. Seeni Mehraj Begam V.K.S. Vyzul Karnine
Pn. Nor Azlin binti Mohd Sidek
Pn. Rabiatul Adawiyah binti Abdullah Zawawi

PREPARATION OF E-BOOK, TENTATIVE & ABSTRACT/ PROJECT COMPILATION
Ts. Dr. Norani binti Abd Karim
Dr. Ainul Haezah binti Noruzman
Pn. Nur Zahirah binti Mohd Ghazali
Pn. Halimaton Sa'adiah binti Sa'don
Pn. Aliza binti Md Atan
Dr. Parameswari A/P Shunmugan
En. Mohd Firdaus bin Sedet

ORGANIZING COMMITTEE

JUDGES

Ts. Ahmad Fauzi Awang
Pensyarah Kanan
Pusat Pengajian Industri Perkayuan
UiTM Cawangan Pahang

Dr. Nor Hazurina binti Othman
Fakulti Kejuruteraan Awam dan Alam Bina
UTHM

Dr. Norhafizah binti Salleh
Fakulti Kejurteraan Awam dan Alam Bina
UTHM

Prof. Madya Ts. Dr. Mohamad Yusri bin Aman
Fakulti Kejurteraan Awam dan Alam Bina
UTHM

Ts. Dr. Muhammad Fikri bin Hasmori
Fakulti Kejurteraan Awam dan Alam Bina
UTHM

Tc. Sazynrash bin Manogaran
MNE Solutions (M) Sdn. Bhd.

En. Mohamad Adlee bin Nordin
Sazmed CAE Trading

En. Mohamad Hafiz bin Yahya
Hfzikah Utara Enterprise

En. Khairul Aiman bin KHairul Anuar
Naxus Communication Sdn. Bhd.

En. Armi Shahran bin Mohamad
Celcom Axiata Berhad

En. Nur Ftri bin Zulhaimi
Fanuc Mechatronics (Malaysia) Sdn. Bhd.

Pn. Syaridfah Noor binti Deraman @ Abd. Rahman
Politeknik Sultan Salahuddin Abdul Aziz Shah

En. Ahmad Fakaruddin bin Mohd Fauzi
Politeknik Sultan Salahuddin Abdul Aziz Shah

En. Moo Pei Siang
LLJ Marketing Sdn. Bhd.
YKL One Hour Service Trading Sdn. Bhd.

Dr. Logaiswari Indiran
Senior Lecturer
Azman Hashim International Business School (AHIBS)
UTM

En. Ayotullah Hasby bin Sari Usman
ICS Analyst Energizer

CIVIL ENGINEERING DEPARTMENT

ENTERWAY SHOE RACK CABINET

En. Hazlan bin Abdullah, Nik Amirul Azfin Bin Nik Mohamed Kamal, Muhammad Farid Bin Khasim, Muhammad Zarif Aiman Bin Mat Zuki, Usahrani A/P Ramasamy

The purpose of this project is to design a shoe rack that incorporates chairs and can save space. This shoe rack also functions at the top of the shoe rack. There are cushions to sit on. The idea for this shoe rack came from needs to be used as seating and shoe storage. The project results in a more attractive design than the existing shoe racks on the market right now. An alternative to producing an agronomic design is due to the measurement of the height and width of this shoe rack. Related problems have already been identified, large shoe racks that take up a lot of space, this is not a problem for those who have home space, office, spacious room. During the unpredictable weather that disrupts the daily lives of people. This can be seen when users experience damp shoes during the rainy season. Damp shoes will cause a foul odor and are uncomfortable to wear if not dried immediately as well as this project prioritizes to design using 3d autocadd and produce shoe racks according to a predetermined design. In addition, the method used to prepare this product is through a questionnaire to 45 respondents, namely 25 women and 20 men through observation and questionnaires. Findings show that shoe racks are more important for everyone to arrange shoes neatly and cleanly. In conclusion, this shoe rack is very important and useful to the buyers of this product.


CARPENTARY
ROYALTY
ES RACK
CABINET
FOR SALE
PRICE FOR RM450.00
BOOK NOW
CONTACT US
01116623508
42RANIU@GMAIL.COM

SURVIVAL STAFF

En. Muhammad Kamal Ariffin bin Hj Badrun, Nur Farashahirah Bt Mohd Adirizal, Nurul Asyiqin Bt Hamzah, Najihah Bt Khalid

The purpose of this project is to produce Survival Staff by using recycled materials. Survival staff improved wood and rattan by replacing them with aluminum produced from recycled materials. The purpose is to introduce survival Staff has described the initial introduction of wood used since time immemorial were converted made from recycled aluminum poles. The use of Survival Staff also has many advantages that survival staff can help people who wish to go on an adventure and as a flagpole. The purpose of the literature review conducted was to gain an understanding of the existing research and debate related to Staff Survival. The purpose content for the methodology is there are drawings, designs, and types of materials. This research focuses on adults who want to enter the survival dimension. Survival Staff must test the Loading Test, Scratch Impact Test, Test, Water Resistance Test, Fall Test and Wind Test. Finally, Survival Staff was able to complete the Final Year Project.

KEMENTERIAN PENDIDIKAN TINGGI

SURVIVAL STAFF

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

SUPERVISOR : ENCIK MUHAMMAD KAMAL ARIFFIN BIN

STUDENT

Nur Farashahirah binti Mohd Adirizal

08DBK19F2007

Nurul Asyiqin binti Hamzah

08DBK19F2002

Najihah binti Khalid

08DBK19F2003

BACKGROUND RESEARCH

Survival Staff is a hybrid of wood and rattan sticks. We enhanced the wooden and rattan sticks by replacing them with aluminum created from recycled materials. One of humanity's earliest and most basic tools is the walking staff. For thousands of years, people have used these staff shafts. A survival Staff is a stick that has a weapon in it that can protect itself from a threat.

OBJECTIVES

Survival Staff wants to be used as survival hiking a flagpole other than a survival item, to build the strength of a survival hiking that can help us balance our body and as a protective survival container during an emergency when colliding with danger and high-risk situation in the forest.

PROJECT SIGNIFICANT

Aim : This research focuses on adults who wish to enter the survival dimension.

Study: This project creates Survival Staff that can be used for recreational purposes such as trekking.

Finding : This product is produced for users to do trekking activities comfortably for survival in the jungle

SMART TANK MONITOR

Pn. Jamilah bt Abbas, Pn. Zarina bt Mat Sapri, Nur Fatika Bt Md Rosli, Siti Nor Aniza Bt Aslim

"SMART TANK MONITOR" is an innovation device designed to find out the state of the water level in a building's storage tank. Lately we have always been surprised by the sudden interruption of water supply without any notice. Indirectly this will cause the need for water in the building to not be stored properly. This "SMART TANK MONITOR" product helps consumers to know whether the water supply is sufficient or not. The product also uses software and hardware, where in the software section we use Arduino systems and blynk applications. Whereas on our hardware parts use ESP8266 and ULTRASONIC SENSOR. Part of the idea of producing this product was obtained based on data taken from users through the google form, where we found that as many as 50% were unable to cope with the water supply needs when the water outage occurred. We hope that with the invention of this product will help the consumer to be able to store the water supply in the right way as long as the water supply disruption occurs.

SMART TANK MONITOR

Nama ketua kumpulan :
NUR FATIKA BT MD ROSLI (08DPB19F2003)
Nama ahli kumpulan :
NUR SHAHIRAH BT MAZNAN (08DPB19F2010)
SITI NOR ANIZA BT ASLIMI (08DPB19F2023)
NUR SYAFIQAH BT AB KARIM (08DPB19F2025)

PENERANGAN INOVASI

(Latarbelakang inovasi/cetusan idea/penyataan masalah

Maintenance is a challenging job when associated with existing systems in a building such as a residential house, office, apartment, condominium or etc. Therefore, we as a group have created a "Smart Tank Monitor" product that related to plumbing systems in Malaysia and we believe that by producing this product, we can ease or facilitate maintenance work.

IMPAK INOVASI

(Kelebihan/Potensi pasaran/Sebarluas inovasi)

1. Reasonable cost

2. Facilitate the work of maintenance parties to reduce fatigue and the burdens they overcome.

3. Provide facilities to the maintenance party

OBJEKTIF

1. Ease the maintenance on maintaining the tank.

2. Measuring the correct water level

3. System coordinated product to solve the issues faster.

BLOK DIAGRAM/CARTA ALIR OPERASI

C & D INDICATOR SYSTEM

Pn. Nazrizam bt Ab Wahab, En. Azizi Mursidy bin Zainol Abidin, Nurhaida Syamimi Bt Rohaizad, Mohamad Fatehi Bin Nordin, Muhd Nabil Bin Razak, Muhd Arif Aiman Bin Nazri

An indicator is something that can be used as a guide or basic standard as a reference in measuring the changes in an activity or event. COUNTER AND DURATION INDICATOR SYSTEM is a specially innovated project as a result of the improvement of the idea of a previous senior project for use in the 'surau' in order to prevent Covid-19 outbreak infection. The idea to innovate the COUNTER & DURATION INDICATOR SYSTEM also arose from the results of field studies and self -research that have problems with congestion and long waits to wait for a turn for a person or a group who wants to use a discussion room in a library. The main objective of this creation is to produce an indicator that can minimize the time for use by users using the discussion room. In addition, this product can also prevent the front area of the discussion room to be too crowded and users do not have to wait too long to wait their turn. The special feature of this product is that it is easy to operate with a reminder feature that sounds when the time is up. The methodology of this study was conducted through group collaboration and a survey conducted at the location of the library studied. The results of interviews and experiments at PERPUSTAKAAN DAERAH GOMBAK (PPAS) have made this project a success. Based on this study, it is hoped to improve to ensure the production of more creative and innovative projects for future use. Several suggestions for improvement from feedback for finish and size were considered. In conclusion, this innovative product COUNTER & DURATION INDICATOR SYSTEM is expected to help the public as a tool for time warning and hopefully this project can be continued for commercial purposes in the future.

C&D INDICATOR SYSTEM

Nama ketua kumpulan :
MOHAMAD FATEHI BIN NORDIN (08DPB19F2011)

Nama ahli kumpulan :

NURHAIDA SYAMIMI BINTI ROHAIZAD (08DPB19F2008)

MUHAMMAD NABIL BIN RAZAK (08DPB19F2001)

MUHAMMAD ARIF AIMAN BIN NAZRI (08DPB19F2024)

PENERANGAN INOVASI

(Latarbelakang inovasi/cetusan idea/penyataan masalah

Kesesakan di bilik khas perpustakaan itu berpunca daripada segelintir pengguna menggunakan masa yang terlalu lama sehingga pengguna lain terpaksa menunggu. Oleh itu, kami mencipta produk yang dipanggil Sistem Penunjuk C&D untuk memantau masa yang dihabiskan oleh setiap pengguna bilik khas di perpustakaan.

IMPAK INOVASI

(Kelebihan/Potensi pasaran/Sebarluas inovasi)

1. Menjimatkan masa pengguna lain
2. Makluman dengan masa sendiri
3. Dapat mengelakkan kesesakan di luar bilik khas perpustakaan
4. Menjimatkan tenaga kerja supaya perpustakaan tidak perlu lagi memantau masa pengguna.

OBJEKTIF

1. Pantau had masa pengguna
2. Elakkan masa berlebihan yang dihabiskan oleh pengguna
3. Mengelakkan kesesakan di hadapan bilik khas di perpustakaan yang sesak

BLOK DIAGRAM/CARTA ALIR OPERASI

SMART DUSTBIN INDICATOR AND SELF CLEANSE

Fadiah Yeoh Binti Mohd.Syukri Yeoh, Hairee Amreel Bin Mohd Norhadi, Iman Fawwaz Bin Khairul Azhari, Muhammad Hafiz Bin Mohd Adif
& Maisharah Bt Osman, Sarah Afzan bt Abd Karim

The garbage collection process in Savanna condominium which has 4 blocks, each with 28-storey that consists of 18 floors and each floor with 2 garbage rooms. Waste management in this condominium is not efficient as workers had to patrol every level to check the bins whether they are full or not, resulting in loss of time to patrol. In addition, the constraint of cleaning workers and the number of residential units plus the large number of blocks, make it difficult for garbage collection, and the schedule for frequency of garbage collection is carried out only once a day. Therefore, to solve this problem we came up with this innovation project known as Smart Dustbin Indicator and Self-Cleanser that can detect the maximum level of the trash can and provide notification through a mobile phone. In addition to that, this product has a "self-cleanse" feature that can rinse the trash can with clean water. The discussion was qualitatively analyzed by collecting materials from the internet and field studies conducted through interviews with garbage collection workers at Savanna condominium. The findings from this study can facilitate the garbage collection management system in Savanna condominium by providing sensor tools and control boards. The outcome of this study can be beneficial in facilitating the garbage collection management system in Savanna condominium. The results of this implementation show that the Smart Dustbin Indicator and Self-Cleanser project benefited the management and employees assigned to collect garbage on the day.

SMART DUSTBIN INDICATOR AND SELF CLEANSE

Nama ketua kumpulan :
IMAN FAWWAZ BIN KHAIRUL AZHARI (08DPB19F2006)

Nama ahli kumpulan :

MUHAMMAD HAFIZ BIN MOHD ADIF (08DPB19F2021)

HAIREE AMREEL BIN MOHD NORHADI (08DPB19F2018)

FADIAH YEOH BINTI MOHD SYUKRI YEOH (08DPB19F2027)

PENERANGAN INOVASI
(Latarbelakang inovasi/cetusan idea/penyataan masalah

Pengurusan sampah di kediaman seringkali menjadi masalah apabila sampah-sampah yang dibuang tidak di urus dengan baik sehingga tempat pembuangan sampah menjadi kotor dan berbau apabila sampah tidak dikutip terutamaya di kediaman rumah bertingkat seperti di kondominium.

Suatu tinjauan melalui pemerhatian dan temubual telah dilakukan di Kondominium Savana, Bangi Selangor yang mempunyai 28 tingkat dengan 4 blok , 18 pintu dan dilengkapi dengan 2 bilik sampah di setiap aras

Pengurusan sampah di kondominium ini didapati tidak efisien kerana kekangan pekerja pembersihan dan pekerja yang terpaksa kerap meronda di setiap aras bagi memeriksa sama ada sampah sudah penuh atau tidak. Ini menyebabkan kerugian masa dan tenaga pekerja yang perlu memeriksa jumlah unit kediaman dan jumlah blok yang banyak,kami juga mempunyai masalah yang dihadapi akibat dari pengurusan jadual pengutipan sampah yang tidak teratur dan tidak berjadual yang mengundang kehadiran haiwan dan serangga perosak.Selain itu,akibat dari kelewatan menyelenggara tong sampah basah,ia mewujudkan suasana dan bau yang kurang menyenangkan dan memberikan impak negatif pada imej kawasan kediaman yang dikatakan premier tersebut

OBJEKTIF

1-Menghasilkan satu indikator yang berupaya mengesan kuantiti sampah yang melebihi had kutipan yang boleh menghantar notifikasi melalui telefon bimbit kepada pekerja pembersihan tanpa perlu mereka meronda di setiap aras.

2-Membantu pengurusan sampah di kondominium supaya lebih effisien.

3-Mengekang penularan masalah bau sampah di kawasan fasiliti yang bertingkat

IMPAK INOVASI
(Kelebihan/Potensi pasaran/Sebarluas inovasi)

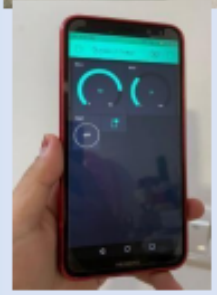
1-Menambah baik sistem pengutipan sampah di fasiliti bertingkat

2-Menyelesaikan masalah sampah terbiar,berbau dan kehadiran haiwan/serangga perosak

3-Menjimatkan masa dan tenaga pekerja bagi proses pengutipan sampah.

4-Membantu pihak pengurusan membuat pemantauan terhadap kerja harian

BLOK DIAGRAM/ CARTA ALIR OPERASI
(Produk Inovasi smart dustbin indicator and self cleanser)



SAMPAH PENUH
↓
PEKERJA TERIMA NOTIFIKASI MELALUI TELEFON BIMBIT
↓
PEKERJA KUTIP SAMPAH
↓
PEKERJA TEKAN "BUTTON" UNTUK PROSES BILASAN (JIKA PERLU)

SMAHITRA (SMART APPLICATION HIGHWAY AND TRAFFIC)

Muhd Muzani Bin Mohd Kelana, Nurul Ain Nabilah Binti Mohd Zakri, Ainul Haezah Binti Noruzman

The research explores the potential factors influencing students' academic achievements and satisfaction with online learning platforms. Generally, face to face during class is usually known as a traditional method. However, nowadays, teaching and learning online have become more significant due to the transition of the academic world to education digitalisation. Education line in digitalisation become relevant since pandemic covid. Due to these obstacles, institutions like polytechnic slowly transformed into fully online learning platforms to accommodate the current situation. Apart from that, the teachers also need to find a way to solve an issue or problem regarding students performance in mastery in their programme. The study is aimed to investigate students achievement and satisfaction by using apps in highway and traffic (dcc 30103) as online education platforms. The method used in this study was used quantitative method and sampling technic using simple random sampling. The respondents sampling consist of 66 from the diploma of civil engineering at politeknik sultan salahuddin abdul aziz shah. The apps called smahitra was produced as online learning tools and would be tested soon. It is hoped that this app would help students learn better and benefit students performances in assessment. Therefore, lecturers and students must be sensitive to changes in this situation so that they do not lag behind the changes that are taking place in educational institutions. From the previous studies, many students have difficulty opening many notes and references during the learning process. Many institutions, including polytechnics, conduct online learning during the pandemic season. These reflections make students have difficulty when learning online. For example, students find it difficult to understand the concept of calculation because they have to open many notes at a time. In addition, students also have problems remembering and understanding formulas


POLITEKNIK
MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH
SMAHiTRA
(Smart application highway and traffic)
SMAHiTRA
SPECIAL PROJECT BY
Muhammad Muzani Muhd Kelana
Nurul Ain Nabilah Mohd Zakri
Ainul Haezah Noruzman

RESEARCH OF WEBSITE DEVELOPMENT EZ_EUROCODE3

Noor Emmmirul Iqran Bin Noorul Hadi, Muhammad Hasan, Ghaibul Asrar Bin Hasun, Yusnita Binti Yusof

The main objective of this research is to develop a website related to the course DCC40142 Steel Structure Design that can be used on smartphones and computers and also help students in searching data for the calculation process of steel structure design. The problem statement of his research is students have difficulty in finding data for the calculation of steel structure design. Therefore, they are difficult to refer and obtain data for the calculation process of steel structure design. The scope of this study is to help students who take the course DC40142 Steel Structure Design. Preliminary research found that 55% agreed and 42% strongly agreed that they had difficulty in finding data on the properties table for the steel structure design calculation process. Therefore, a data platform from eurocode3 will be built by the researcher to solve the problems faced by the students. This research also includes a literature review, collection of information from questionnaires, analysis of information obtained, writing of research reports and recommendations for future research. The purpose of Ez_eurocode3 is to assist students in data search for steel structure design calculation. After providing the website and questionnaire form to the respondents, analysis was done to know the effectiveness of Ez_eurocode3 website. Based on the analysis, 55.3% (21 people) of the respondents agreed and 44.7% (17 people) strongly agreed that Ez_eurocode3 can help them when doing data search for the calculation of steel structure design. It proves that the objective of this study is achieved where the website Ez_eurocode3 can help users in data search for the calculation process of steel structure design. In addition, it can be concluded that with the Ez_eurocode3 website, it has achieved the objective of the first study which is to develop a website related to the course DCC40142 Steel Structure Design (steel structure design) that can be used on smartphones and computers.


RESEARCH OF WEBSITE DEVELOPMENT EZ_EUROCODE3
EMMIRUL IQRAN, HASAN GHAIBUL & MADAM YUSNITA
https://ezeurocode3.wixsite.com/ezeurocode3
EZ_EUROCODE3

STUDY ON OIL PALM ASH IN CONCRETE MIXTURE

Abdul Rahman Bin Kamarul Zaman, Muhammad Irfan Hakimi Bin Imran & Hafizah Rina Binti Abas

Nowadays, concrete mix is very important because it have a positive effect on a construction such as the strength of concrete or also have a high durability for any project that will be carried out. Therefore, it also requires a high material to get a good concrete mix.

Cement is the second highest material humans use it after water so it will use high natural resource materials like limestone in the mountains so it will make a negative impact to the environment like animal habitats in the mountains ganang lose their habitat. Concrete experts also stated that human should find a substitute for cement to prevent the earth from running out of nature.

This research is carried out to compare palm ash concrete and ordinary concrete. Concrete with oil palm ash is made with different percentages 15%, 30 and 45% of cement in concrete mix. The research has been carried out the strength of compression of palm ash concrete. The sample curing will take 7,14 and 28 days in the plain water. From the research, the stability of the mixture as a whole decreased with the addition of palm ash. This is due to cracking on the aggregate. The strength value decreases with the addition of each percentage of palm ash into the mixture and the lowest flow value is 4.2 mPa (Megapascal) at an addition rate of 30% palm ash. Based on the strength of this value it can be concluded that the mixture becomes softer with the addition of palm ash.

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

STUDY ON OIL PALM ASH IN CONCRETE MIXTURE

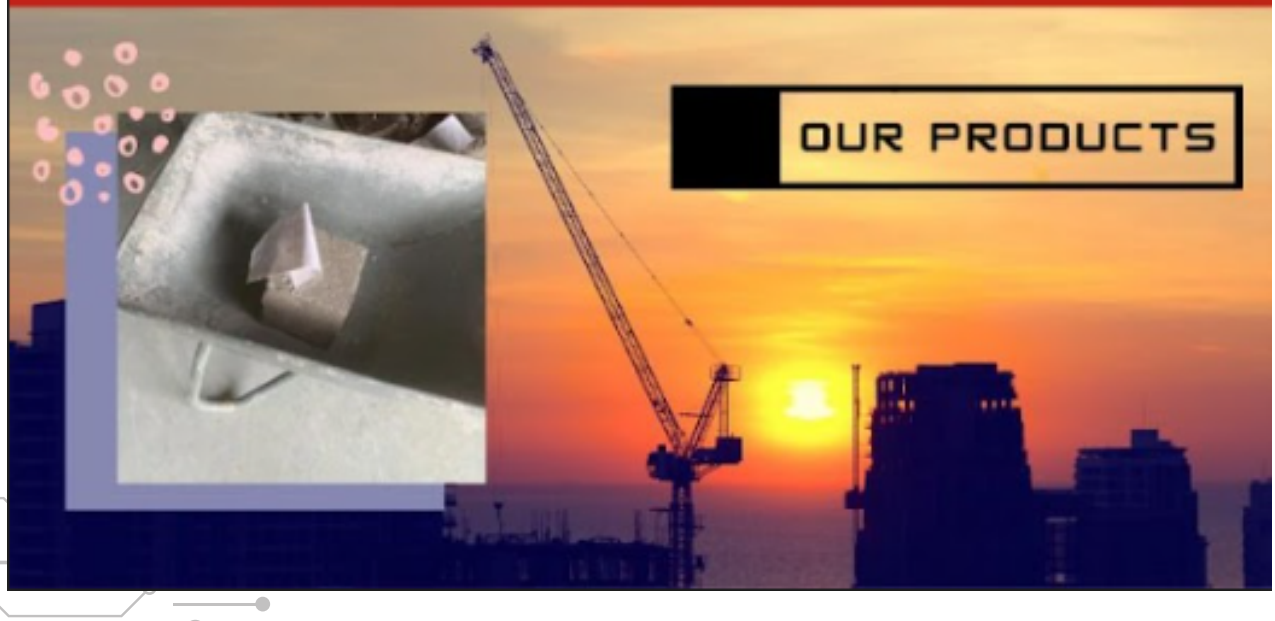
MUHAMMAD IRFAN HAKIMI BIN IMRAN

ABDUL RAHMAN BIN KAMARUL ZAMAN

SUPERVISOR : PUAN HAFIZAH RINA BINTI ABAS

BACKGROUND RESEARCH

This study was chosen because cement is a non -renewable material. Therefore , a study with respect to oil palm ash was selected as an additive and substitute to cement based on a certain ratio .



SMART WATER TANK SENSOR

Muhammad Fitri Bin Saadon, Muhammad Lukmanul Hakim Bin Sakri, Zurina Binti Safee

Each product produced is intended to meet objective requirements the actual project. The product you want to produce also needs to be improved from time to time according to the suitability of its use. Given the variety of problems which arises as a result of the malfunction of the problem in terms of its mode of operation and storage of the project, then various types of designs are produced according to the wishes of users who always have trouble to detect the source of water tank overflow. With the new innovation, the water overflow tank detector that uses the new innovation that is the system (IOT) is an important aid to detect and be able to examine water tank overflow via mobile phone. It is a water overflow detector that is easy to detect when the water tank cannot function properly due to a faulty internal system. Therefore, the main objective of this project is to produce and use Ultrasonic Sensor using Nodemcu esp8266 to detect overflow water on water tank. The second objective is to generate water tank overflow systems using apps (Arduino IDE software).The third objective is to test the effectiveness of overflow systems using sensors by researching in apps. The Smart Water Tank Sensor is specially created to assist and also alert home water tank users detect water overflow that occurs. It can also prevent the occurrence of water wastage due to overflow. This product is designed in a creative way which uses a new system and uses coding for this sensor to work well and safely. With the availability of this product residents in the residence can find out and detect water overflows in their tanks more easily as the system will provide a signal about an overflow of water on a house tank. In addition, the system also has a signal which are carefully and securely connected on a respective smartphone. In general, this system can be helpful and convenient residents in residences to detect water overflows on their respective residential tanks with new innovations we created

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PSA INNOVATION TECHNOLOGY AND COMMERCIALIZATION PITEC 2022

SMART WATER TANK SENSOR

DIPLOMA IN CIVIL ENGINEERING

GROUP MEMBERS:
1.MUHAMMAD FITRI BIN SAADON (08DKA19F2004)
2. MUHAMMAD LUKMANUL HAKIM BIN SAKRI (08DKA19F2030)

SUPERVISOR:
1.PN ZURINA BINTI SAFEE



INTRODUCTION

- A water tank serves as a temporary storage facility for water before it is distributed to homes, ponds, and other areas.
- Smart Water Tank Sensors (SWTS) that use a new change known as the addition of system (IOT) can provide users with an early warning.
- Advantages of SWTS - minimize water waste due to overflow.

PROBLEM STATEMENT

- A common problem in the internal system of a water tank – Buoy damaged that cause water overflow.
- Individuals who are unable to detect a water tank overflow in their homes may encounter unfavorable consequences.

OBJETIVE OF STUDY

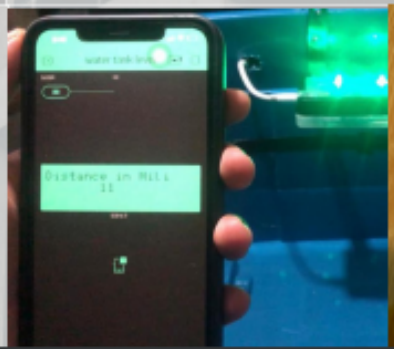
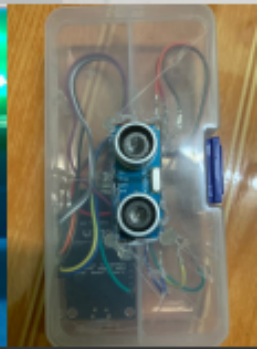
- A tool and system to detect and signal to users that the tank has water overflow caused by the internal system of the tank is damaged
- To develop the water tank sensor using Arduino Uno
- To facilitate users in terms of time and energy in dealing with water tank overflow problem when using this product

CONCLUSION

- Smart Water Tank Sensor (SWTS) is a new product or a new innovation.
- Aims: To save users time and energy in the event of an emergency
- Main focus of this project: To address the problem by designing a tool that has not been born in Malaysia.

FINDING

- The end of this product was tested by using observation method and questionnaire
- Users can save time and energy in dealing with water tank overflow problem when using this product
- It also a new inovation product that may help a lot of water tanks users in Malaysian while using this new inovation, smart water tanks sensor.

‘PRUCYTRUS’ As a coagulant agent in water treatment

Puan Maswira Binti Mahasan, Nur Fatin Binti Jalil, Haziqah Salleh

Nowadays, chemical agent such as aluminium sulphate (alum), ferric sulphate or sodium aluminate, ferric chloride of polymer is the common coagulant that used for water purification in water treatment technology. The chemical coagulants have a positive charge to neutralizes negative charge of dissolved and suspended particle in the water. The suspended particles vary in source, charge, particle size, shape and density. The research study the potential influencing of soy beans and kaffir lime peels as organics coagulant, alternative to chemical coagulant in water treatment process. The effective of coagulant will produce a floc, heavy and quickly settle out of the water treatment process. Therefore, the level of water turbidity before and after treatment is a main parameter monitoring. This study aims to reduce the rate of water turbidity and to produces organics coagulant agents for treat the water samples collected from Sungai Gabai, Sungai Langat and Sungai Kancing. In the study, we focused on to produce the optimum ratio of coagulant concentration to reduce of turbidity. The method used based on experimental laboratory testing, whereas the water samples will be adding with soy bean and kaffir lime peels that we called as Prucytrus coagulant. The experiment was carries out for Jar Test,DO,PH, and Turbidity testing with liquid and powder organics coagulants designed. The results showed that the best ratio for the Prucytrus coagulant with 3g/litre in powder base is the most effective coagulant for reduce turbidity in water samples.

PRUCITRUS as coagulant agent in water treatment

PRUCYTRUS ia a combination name of kaffir lime peels and soy beans.
Prudence : one of the many qualities and virtues that the puritans adopted as name after the reformation.
Cytrus : is a scientific name os kaffir lime (CITRUS hystrix)

OBJECTIVES :

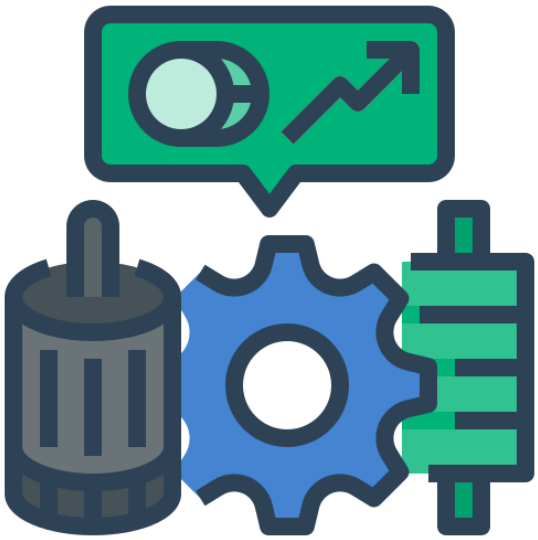
1. To compare the parameter of water using organic materials according to the water environment (EIA)
2. To reduce the rate of the water turbidity
3. To produce coagulant agents from organic ingredients using Kaffir lime peels and soybeans

SUPERVISOR:
PUAN MASWIRA BINTI MAHASAN

NUR FATIN BINTI JALIL
(08DKA19F2022)

HAZIQAH SALLEH
(08DKA19F2002)

ELECTRICAL ENGINEERING DEPARTMENT



ZIKR LAMP FOR CHILDREN

Puan Zabidah binti Haron,Nurul Athiqah binti Wahyudi

This study focused on a children's health. Sleeping is a daily routine for most of us, and we do not spend much time thinking about its importance especially for the children. However, with the growing use of technology and lifestyle changes, the younger generation is losing many hours of sleep. Because of habits such as late nights parties and spending too much time on mobile phones/laptop before sleeping, there are rising health concerns in the younger generation. Based on the findings from various studies, it is evident that sleep is even more important for children than adults, and that is when most brain development happens. Poor sleep affects children's behaviour and makes them less productive. It can be used to turn ON and OFF the lighting system of the home automatically by detecting the presence of humans.

Also, there is no need to worry about electricity bills as the lights get OFF when there is no human and hence one needs to pay the bills as peruse. The main components used in this system are Arduino Uno, PIR, and Relay Module. Out of these components, the operation of the system mainly depends on the PIR sensor which helps in detecting human presence.

KEMENTERIAN PENDIDIKAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Zikr Lamp for Children

NAME: NURUL ATHIQAH BINTI WAHYUDI
MATRIX NUMBER: 08DEP19F1071
INSTITUTION: POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

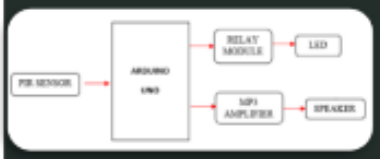
INTRODUCTION

I will create a sleeping light for children that will turn on when it detects someone approaching it and will emit the sounds of Zikr. It will switch off automatically after 10 minutes. This is because some children have difficulty falling asleep and forget to turn off the lights when they want to sleep. With this automatic light which contains Zikr, the children will be able to sleep easily and will no longer need to turn off the lights because they will turn off on their own.

OBJECTIVE

- To develop a hardware and software that illuminate the room at night and dark.
- To assisting children in sleeping more easily and comfortably by playing the sound of Zikr.

METHODOLOGY



IMPACT OF INNOVATION

- This innovation was designed to give benefits for children's time will be freed up for more beneficial activities, teach children to do more Zikr.
- Assist the child in sleeping more comfortably and soundly.
- Through repetition, children will easily to remember and memorized Zikr.
- It also will assist parents who are unable to provide their children with a basic Islamic education.

WATER QUALITY MONITORING SYSTEM WITH IOT

Pn. Akmarya Syukhairilnisah Bt. Mohd Akhir, Joshua Wong Jian Jun

Water pollution is one of the biggest fears for the green globalization. To ensure the safe supply of the drinking water the quality needs to be monitor in real time. In this paper we present a design and development of a low-cost system for real time monitoring of the water quality in IOT (internet of things). The system consist of several sensors is used to measuring physical and chemical parameters of the water. The parameters such as temperature, PH, turbidity, flow sensor of the water can be measured. The measured values from the sensors can be processed by the core controller. The Arduino model can be used as a core controller. Finally, the sensor data can be viewed on internet using WI-FI system.

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

WATER QUALITY MONITORING SYSTEM WITH IOT

Joshua Wong Jian Jun

08DEP19F1023

Politeknik Sultan Salahuddin Abdul Aziz Shah

Pn. Akmarya Syukhairilnisah Bt. Mohd Akhir

PENERANGAN INOVASI

(Latarbelakang inovasi/cetusan idea/penyataan masalah

In the 21st century, there were lots of inventions, but at the same time were pollutions, global warming and so on are being formed, because of this there are no safe drinking water for the world's pollution. Nowadays, water quality monitoring in real time faces challenges because of global warming limited water resources, growing population, etc.

IMPAK INOVASI

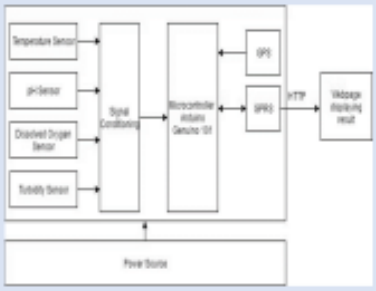
(Kelebihan/Potensi pasaran/Sebarluas inovasi)

This project is helpful because It detecting the more parameters for most secure purpose. Increase the parameters by addition of multiple sensors. By interfacing relay we controls the supply of water. Aquatic living things sometimes don't know the water is good or bad but they just telling you from they way they act in the water and if serious, aquatic living things might die due to the bad quality of water. At the same time, human also need to drinkclean water. If the water is polluted, even human got water purifier in their house, the water purifier still cannot 100% clean all the bacteria in the polluted water.

OBJEKTIF

1. To make a hardware for this project.
2. To design a project for the water quality become clean so that the living thins in the water will have a good living environment
3. To detect any dirty things and check the water quality.

BLOK DIAGRAM/CARTA ALIR OPERASI



DRONE WITH IOT BASED SPEAKER ANNOUNCEMENT

Puan Nur Suriya binti Mohamad, Nor Asri bin Moris

The increasingly popular use of drone nowadays is a hobby of certain groups to operate unmanned aircraft. The use of drone as a monitoring and information delivery tool is a new exposure to show the advancement of technology applied in areas that are difficult to reach and explore. The advantage of drones in monitoring and collecting all information as well as being able to convey information through announcements quickly and directly is able to make decisions immediately after identifying the initial problems that arise. Nevertheless, each problem statement needs to be studied to benefit each item to be planned. Studies have been conducted to combine hardware and software in addressing this emerging problem. The use of IoT applications is given attention by using the Arduino Pro mini in producing innovative products. To achieve the objectives of the study, produce IoT-based products such as designing an innovative product using a lightweight Arduino Pro Mini that can be flown with a drone to monitor and deliver covid-19 SOP information and disaster instructions. Publish BLYNK Applications connects between Arduino to monitor community conditions and situations as well as one -way communication and for that is the use of drones and BLYNK apps that provide advantages in easy and efficient delivery of information. The results of the study found the use of drones relevant and efficient when combined with applications because the physical distance can be done and in remote conditions can be controlled and audio broadcasts can be disseminated to the public. The goal of community health monitoring can be achieved with this method by the occurrence of distance between individuals in deciding the chain of covid-19 epidemics. The achievement of the objectives of the study clearly shows that each challenge can be overcome with appropriate measures and meet the purpose to curb the epidemic of covid-19 disease is able to provide guidance to the public according to the needs, situations, disaster areas and communities. . Successful innovation products are produced according to the beginning of the idea, planning and objectives desired to solve the problem. The production of these innovation can be enhanced according to the circulation of technology in the future if the ideas are placed well and perfectly.

POLITEKNIK MALAYSIA

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Electrical Electronic Engineering Innovation Competition 2022
Sesi : 2 2021 / 2022

INNOVATION PROJECT

Drone with IoT based Speaker Annoucement

Student : NOR ASRI BIN MORIS (880502075183)
Supervisor : PUAN NUR SURIYA BINTI MOHAMAD (820931145966)

Product Description

Drone is a popular toy nowadays, it is a hobby of people who want experience in driving an aircraft that can fly without the need for an in -flight pilot to navigate the flight direction because it only needs to be controlled using electronic devices and programming software to navigate the direction of the drone's flying movement. In addition, drones also refer to aircraft that take off and land vertically, can float in the air at very low altitudes or predetermined altitudes.

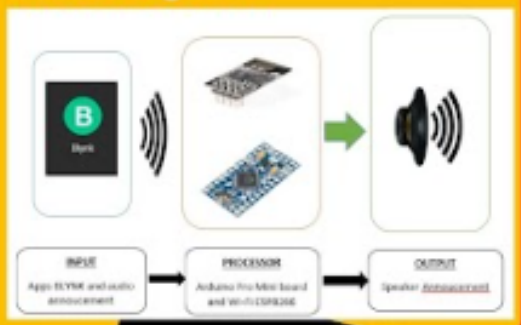
Objective

To design modern electronic technology use the Arduino Pro Mini to monitor and communicate covid-19 SOP information or disaster instructions.

To implement a BLYNK application using an Arduino to monitor community conditions and situations and communicate one -way.

To develop a combination of hardware and software, namely drone and BLYNK application that provide advantages in simple and efficient delivery of information.

Block diagram



Impact

Providing new ideas and innovations that convince users for new experiences in the use of IoT applications benefits the further development of user -friendly Ardunino ProMini technology

Infografic

Product Picture

SMART HOME MAILBOX

Pn. Nur Hadiana Binti Nasruddin, Noradibah Binti Norhan

"Smart Home Mailbox" is a smart mailbox that we recommend. Users with a cellular phone and a conventional web browser can easily receive spam-filtered notifications for mail received. Several times a day, we check our virtual mailboxes. The goal of this project is to develop a smart mailbox. The primary goal of this research is to introduce smart mailbox applications by including sanitizer into mailboxes. The application's primary job is to detect the presence of packages in the mailbox. The application's hardware consists of a mailbox design and a number of related components that perform various smart operations. The smart mailbox's software guarantees that the hardware components work properly. This is characterized as a mailbox that can alert the recipient when mail has been delivered, provides access to the appropriate persons, and cleans itself automatically.

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

SMART HOME MAILBOX

Noradibah Binti Norhan

08DEP19F2006

Politeknik Sultan Salahuddin Abdul Aziz Shah

Pn. Nur Hadiana Binti Nasruddin

PENERANGAN INOVASI

(Latarbelakang inovasi/cetusan idea/penyataan masalah

The issue arises when you are away from home for an extended period of time. People are too engaged with their employment to stay late at night or take vacations. They have a habit of forgetting to check the mailbox for mail. Aside from that, finding out when an item has arrived is time consuming. When people are waiting for important mail, they may check their mailboxes frequently. When they come down from a high floor and see their possessions, but they aren't there yet or the mailbox is empty, it's aggravating.

IMPAK INOVASI

(Kelebihan/Potensi pasaran/Sebarluas inovasi)

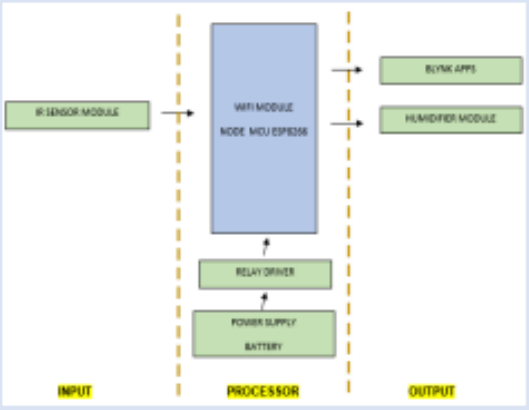
Smart Home Mailbox detects a parcel when it is received in the mailbox. The ability to alert the recipient that mail has been received is defined as "smart" in this sense. with the presence of automatic sanitizers in the mailbox to prevent the spread of viruses that occur nowadays. The goal is to create a product that will show that the concept is variable and functional in the future, and the solution is made taking into account residential or office buildings.

OBJEKTIF

More specifically the principle objective of this research are :

1. To design Smart Home Mailbox, secure mailing notifications and automate sanitize.
2. To implement the design of the model into Smart Home Mailbox.
3. To develop the mechanical aspects of the mailbox an iterative design process to used, constructing and testing solutions searching for improvements for a more optimal design.

BLOK DIAGRAM/CARTA ALIR OPERASI



SOIL MOISTURE SENSOR

Pn. Nur Hadiana Binti Nasruddin, Rajasri A/P Ravi Chandran

Soil Moisture Sensor is the name of this project. This product is used to determine the moisture content of the soil. Some people working in agriculture are having trouble keeping track of their soil moisture levels. A soil moisture sensor is not affordable to everyone in the agriculture industry because it is expensive and the sensor's component cannot be replaced if it breaks. The goal of this innovation is to make it easier for farmers and gardeners to keep track of their soil moisture levels. To thrive, all plants require a precise degree of soil moisture. It's crucial to keep an eye on the soil moisture level because it has an impact on plant growth. This product is inexpensive, and the parts are easily replaceable.

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Electrical Electronic Engineering Innovation Competition 2022
Sesi 2021/2022

INNOVATION PROJECT

TITLE: SOIL MOISTURE SENSOR

STUDENT: RAJASRI A/P RAVI CHANDRAN

SUPERVISOR: PUAN NUR HADIANA BT NASRUDDIN

Product Description

Soil Moisture Sensor is the name of this project. This product is used to determine the moisture content of the soil. Some people working in agriculture are having trouble keeping track of their soil moisture levels. A soil moisture sensor is not affordable to everyone in the agriculture industry because it is expensive and the sensor's component cannot be replaced if it breaks. The goal of this innovation is to make it easier for farmers and gardeners to keep track of their soil moisture levels. To thrive, all plants require a precise degree of soil moisture. It's crucial to keep an eye on the soil moisture level because it has an impact on plant growth. This product is inexpensive, and the parts are easily replaceable.

Product Picture

Objectives

Soil moisture sensors is design to measure the volumetric water content in soil. There are three main objectives as main goals in carrying out this project are :-

1.To create a more convenient way to water our plant than the traditional method.

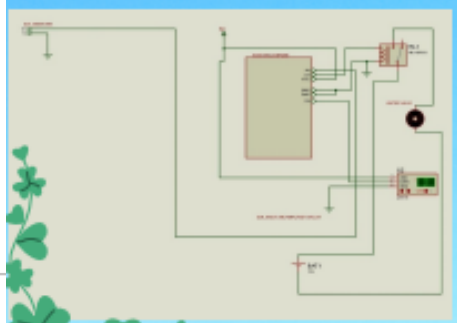
2.To save more time to water our plant only take 3-5 seconds to open the application and start watering using our smartphone.

3.To receive information from Blynk Application on soil condition whether the plants need to be watered.

Hardware Implementation

Block Diagram

Schematic Circuit



Impact of Innovation

Create a system that can track soil conditions and make recommendations to users on how to improve them. The soil moisture, surrounding water condition, temperature, and humidity of the area can all be measured and used to monitor soil conditions. This information is then transferred to a web server to be processed and calculated in order to decide the best course of action. The calculated result and advice are then delivered to the user through the internet, where they can view them via a smartphone app (Blynk).

DEVELOPMENT OF AUTOMATED RESPIRATION RATE MONITORING DEVICE WITH IOT

Dr Baharuddin Mustapha, Mohd Luqman Zulkepli

Respiration rate is one of the vital signs that is being taken by health care personnel every time a patient is presented to them. Good monitoring of respiratory rate allows for reducing the incidence of severe illness and improves the clinical response of patients. Currently, health care personnel manually take respiration rate thus will increase the burden for the personnel and increasing the chance of measurement error. This project proposed a respiration rate monitoring system with internet of thing (IoT) integration which will provide comprehensive data for analysis that will help in clinical diagnosis and treatment of the patient. IoT integration will help in real-time monitoring of patients through the internet and provide faster information regarding the state of the patient. The proposed device used NodeMCU ESP8266 which is an Arduino-based chip with Wi-Fi integration. A thermistor placed in the oxygen mask is attached and will monitor the temperature difference of air during inhalation and exhalation. The device will display the recorded respiration rate onto an LCD and sound an alarm when an abnormal respiration rate is detected. The recorded data can be accessed online via a dedicated web server. The analysis of the data will be used to help identify abnormal breathing such as tachypnea and bradypnea and will help in establishing diagnosis and treatment plans for patients. Different respiration waveforms can be identified for each condition and can provide faster detection of abnormal breathing patterns. It is shown that this device can successfully monitor respiration rate and provides real-time monitoring that can be accessed online.

DEVELOPMENT OF AUTOMATED RESPIRATION RATE MONITORING DEVICE WITH IOT

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

ABSTRACT

Respiration rate is one of the vital signs that is being taken by health care personnel every time a patient is presented to them. Good monitoring of respiratory rate gives the opportunity to reduce the incidence of severe illness and improve the clinical response for patients. Currently, respiration rate is taken manually by health care personnel thus will increase burden for the personnel and increase chance of measurement error. This project proposed a respiration rate monitoring system with internet of thing (IOT) integration which will provides comprehensive data for analysis that will help in clinical diagnosis and treatment of patient. IOT integration will help in real time monitoring of patient through the internet and provide faster information regarding the state of the patient. The proposed device used NodeMCU ESP8266 which is an Arduino based chips with Wi-Fi integration. A thermistor placed in the oxygen mask is attached and will monitor temperature difference of air during inhalation and exhalation. The device will display the recorded respiration rate onto an LCD and sound an alarm when an abnormal respiration rate is detected. The recorded data can be access online via dedicated web server. The analysis of the data will be used to help identify abnormal breathing such as tachypnea and bradypnea and will help in establishing diagnosis and treatment plan for patients. Different respiration waveform can be identified for each condition and can provide faster detection of abnormal breathing pattern. It is shown that this device can successfully monitor respiration rate and provides real time monitoring that can be access online.

PROBLEM STATEMENT

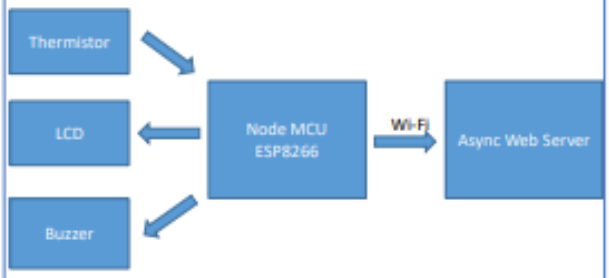
Respiration rate is one of the major vital signs that is being monitor in patient. Currently, most primary health setting takes this vital sign manually by observing the respiration of the patient. This will increase burden on the health care provider with increasing number of patients. Furthermore, to get accurate reading, certain criteria must be met like proper exposure and a full minute count for respiratory rate. By developing a respiratory rate monitoring system, we can take real-time reading of respiration rate for patients that is receiving oxygen treatment and help healthcare worker in managing the patient. The main objective of this project is to develop a hardware that is capable of automatically observe respiration rate of the patient in primary care setting. Furthermore, IOT integration is for easy data logging and analysis of breathing patient of the patient.

OBJECTIVES

1. To develop a hardware for respiratory rate monitoring system.
2. To develop an algorithm for respiratory rate monitoring using thermister sensor
3. To integrate IOT with the device for easy data logging and analysis

PROTOTYPE

BLOCK DIAGRAM

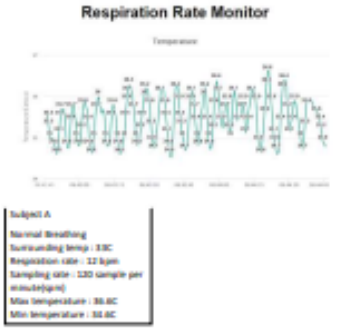


RESULT

The device is worn by several test subject to analyze the effectiveness of the reading. Here is the result for the test subject.

Subject	Gender	Age	RR reading	Comment
A	Male	22	12	Normal breathing, taken in surrounding temperature of 31.C
B	Male	23	14	Normal breathing, taken in surrounding temperature of 23.C
C	Female	20	13	Normal breathing, taken in surrounding temperature of 28.C
D	Female	21	16	Normal breathing, taken in surrounding temperature of 25.C

The graph shows the temperature vs time graph collected from normal breathing with surrounding temperature of 31C. Here, we observed the peak temperature, and it is counted and be represented as exhalation. Peak temperature here is ranging from 35'C-36.6'C. There are 24 peak temperatures in this graph, and the total time is 2 minutes, thus respiration rate is total peak divides by two, so we get 12 breath per minutes. Respiration is non uniform process; thus, each breath is not the same. A deep breath will produce more demarcated peak with higher temperature difference while shallow breath will produce less temperature difference between peak and minimum temperatures.



CONCLUSION

It can be concluded that with the device is able to display respiration rate with accuracy and will sound buzzer if abnormal rate is detected to alert the healthcare worker. The inclusion of IOT in the project also bring new ways for doctors to analyse and monitor their patient in respect to respiratory symptoms.

ARDUINO AUTOMATIC GRASS CUTTER

Puan Masilah Binti Atan, Nur Fielzah Hazwanie Binti Raihan

The project is an Arduino Automatic Grass Cutter, where the machine is controlled using a remote control. This machine has 2 blades that will work to mow the grass. Compared to existing machines, users who use existing machines such as “Mechanical Lown Mower”, “Honda gx35 Lawn Machine”, “Black and Decker Grass Trimmer”, they are exposed to scorching sunlight. It can also cause users to quickly feel tired, headaches and blackouts. This automatic grass cuttter is more suitable for use by the People of Disabled (OKU) and the senior citizen. Users can also control the machine simply by using the remote control. In addition, users can also do other work while waiting for the grass cutter machine to finish in one direction. This machine can be used in areas measuring 20 feet wide, while 20 feet long. Based on research, it can ease the burden of consumers while reducing health risks that are detrimental to consumers.

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

ARDUINO AUTOMATIC GRASS CUTTER

NUR FIELZAH HAZWANIE BINTI RAIHAN
POLYTECHNIC SULTAN SALAHUDDIN ABDUL AZIZ SHAH

BACKGROUND RESEARCH

(i) Most of those who do this grass cutter work are under the scorching sun

(ii) Those who belong to the Disabled (OKU) are quite difficult to do this lawn mower job.

(iii) Can cause headaches, fainting when too long under the scorching sun

The goals of this work include to reduce the cost of cutting and also to beautify the environment. The presence of this lawn mower can help People with Disabilities (OKU) in doing this lawn mowing process.

PROJECT SIGNIFICANT

(i) To design an Arduino Automatic Grass Cutter that has a faster starter to turn to on the machine.

(ii) To implement Arduino Automatic Grass Cutter that do not have any kind of pollution such as noise pollution.

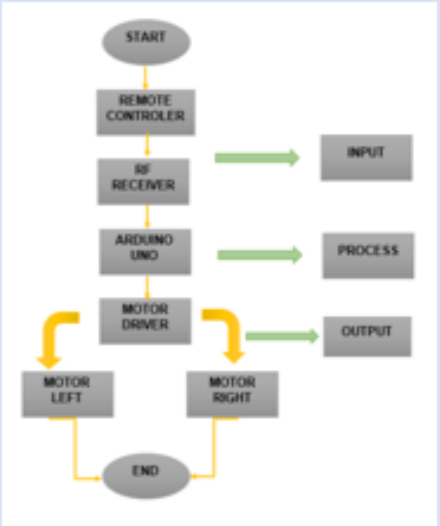
(iii) To develop an Arduino Automatic Grass Cutter that can be started without using any type of fuel. So the cost of using grass cutter is cheaper.

OBJECTIVES

The main objective of this Project is to make it easier for the Disabled (OKU) or senior citizens to do some cleaning work. More specifically the principle objective of this research are:

1. To design an Arduino Automatic Grass Cutter that has a faster starter to turn to on the machine.
2. 2 To implement Arduino Automatic Grass Cutter that do not have any kind of pollution such as noise pollution.
3. 3. To develop an Arduino Automatic Grass Cutter that can be started without using any type of fuel. So the cost of using grass cutter is cheaper.

BLOK DIAGRAM/CARTA ALIR OPERASI



SOCIAL DISTANCING ALERT WRISTBAND

Pn Naagajoothi A/P Adin Naraina, Muhammad Syafiq Bin Rohaidi

When it comes to dealing with the worldwide Covid-19 pandemic, flattening the curve for coronavirus cases will be tough if residents do not take action to stop the virus from spreading. Keeping a safe space between individuals in public is one of the most critical tactics in these epidemics. The identification of persons using social distance monitoring is presented in this work as a preventive technique in limiting physical contact between people.This study is aimed to all people go to places that require social distance like shopping complex , sport places and so on. The Ultrasonic sensor is used to track the people approach others. The Arduino UNO is used a microcontroller which the ultrasonic sensor track the people and the PIR sensor work with a type of electrical sensor that detects infrared (IR) light emitted by objects in its area of vision.This devices can show to us either it save or not in LCD and the buzzer will sound “beep”when the people approaching us less than 100 cm.This project successful in controlling the social distance between us and the people around us.

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

SOCIAL DISTANCING ALERT WRISTBAND

MUHAMMAD SYAFIQ BIN ROHAIDI

08DEU19F2016

BACKGROUND RESEARCH

In this project also use the component to produce this project are such as Arduino-Uno, ultrasonic sensor, buzzer, LCD display and PIR sensor. These are the main items needed in producing the project. Arduino Uno is a microcontroller board based on ATmega328P, an 8-bit microcontroller with 32KB Flash memory and 2KB RAM. It contains everything needed to support a microcontroller. Ultrasonic sensors is an electronic device that measures the distance of a target object by emitting ultrasonic sound waves, and converts the reflected sound into an electrical signal and the Arduino Uno was used as the main component in this project. The project also use the PIR sensor, the PIR sensor allow to sense motion, almost always used to detect whether a human has moved in or out of the sensors range. Lastly the buzzer that been use is piezo buzzer. Piezo buzzer is used in alarms, warning devices and alerts when have human near 1 meter from the person that wore the social distance alert wristband.

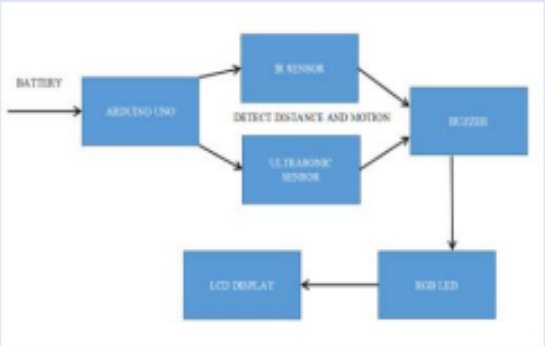
PROJECT SIGNIFICANT

The main purpose of this project is to help people from being exposed to covid-19 outbreaks. For example, when a person goes out of the house to buy daily necessities or work, they are exposed to the public. So, social distancing alert wristband is one of the solution ways to prevent from being exposed to the covid-19 epidemic. Lastly, among the benefits that users get when using this social distancing alert wristband is that can reduce covid-19 positive cases and even prevent the spread of the disease. Besides that, with this social distancing alert wristband can prevent covid-19 outbreaks from spreading.

OBJECTIVES

1. To maintain an even greater distance between themself and others when indoors
2. To be more concern about taking care distance which is in 1 meter when go outside and when facing the crowd people.
3. To avoid from high risk people

BLOCK DIAGRAM



RFID STUDENT CARD ATTENDANCE PRIMARY SCHOOL VIA MESSAGE DURING PANDEMIC

Encik Khairul Napisham Bin Abd Razak, Muhammad Helmie Syafizal Bin Mohd Termizi

When it comes to dealing with the worldwide Covid-19 pandemic, flattening the curve for coronavirus cases will be tough if residents do not take action to stop the virus from spreading. Keeping a safe space between individuals in public is one of the most critical tactics in these epidemics. The identification of persons using social distance monitoring is presented in this work as a preventive technique in limiting physical contact between people.This study is aimed to all people go to places that require social distance like shopping complex , sport places and so on. The Ultrasonic sensor is used to track the people approach others. The Arduino UNO is used a microcontroller which the ultrasonic sensor track the people and the PIR sensor work with a type of electrical sensor that detects infrared (IR) light emitted by objects in its area of vision.This devices can show to us either it save or not in LCD and the buzzer will sound “beep”when the people approaching us less than 100 cm.This project successful in controlling the social distance between us and the people around us.

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

RFID STUDENT CARD ATTENDANCE PRIMARY SCHOOL VIA MESSAGE DURING PANDEMIC

MUHAMMAD HELMIE SYAFIZAL BIN MOHD TERMIZI
08DEU19F2012
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

SUPERVISOR : USTAZ KHAIRUL NAPISHAM BIN ABD RAZAK

PENERANGAN INOVASI

In school, teachers take the old-method way of calling one after another the name of the student and then recording it in a book or file of the student's presence. This method slows down the time and it also wastes paper every month.

So, the proposed system will use modern technology and support for schools, teachers, and parents to address most of the problems with existing attendance systems.

Furthermore, it can also reduce the symptoms of COVID-19 among schoolchildren. With RFID and IoT system technology, he can solve this problem

IMPAK INOVASI

The impact of this project is to assist the school community and parents with their children's arrival and the students' schoolwork. It could also reduce the rate of pupils skipping school and could make it easier for teachers to take attendance with a reformed system.
In addition, it can save paper costs and time for teachers who need to print and relist pupils' arrivals into the system.
Furthermore, parents can find out that their child has attended school safely when their child scans the RFID card and an SMS will be sent to their parents.
Finally, the addition of temperature sensors, is in line with the current pandemic situation.

OBJEKTIF

The main objective of this project is to make it easier for school children to take attendance and reduce the rate of Covid-19 infection that is plaguing the world today. After finding out about this problem, I have found a solution to overcome the problem and help users do their activities throughout the day.

More specifically the principal objective of this research are:

1. Upgrading the modern student attendance system.
2. Can reduce the risk of Covid-19.
3. Make easy for teachers, students and parents.
4. To improve the current system with Arduino and sensors.

BLOK DIAGRAM/CARTA ALIR OPERASI

AUTO KNEE MOVEMENT FOR KNEE REHABILATION

Puan Naagajoothi Ap Adin Naraina,Mohd Zhafran Hadri Bin Zulkifli

The development of joint stiffness can arise as a result of joint injury or damage. Stiffness can be lessened while maintaining the range of motion (ROM) of the affected joint by the use of the continuous passive motion (CPM) exercise Preparing for post-surgery rehabilitation takes a significant amount of time and work. It usually takes a long time and a lot of work for both the therapist and the patient when they work together one-on-one. Recently, new technology has made it possible for therapists to use robotic devices to give patients safe and intense therapy. These devices can be used to do the same things over and over again. The most often reported motion types supplied by rehabilitation robots that have been developed are continuous passive motion . It is a safe rehabilitation method that uses repetitive motions to help patients who have experienced stiffness following knee surgery. I make this project better by coming up with a way to help patients stay on track with their exercise. Exercising after suffering an injury or having a stroke can help you become stronger and more mobile again. This article is about a robot that helps people with knee problems. Beginning on the first day of the experiment, the movement should be very gradual, and it should continue for as long as feasible during the period of the trial. With this project, the overall purpose is to develop AUTO KNEE MOVEMENT FOR KNEE REHABILATION, with the hope of enabling patients suffering from stroke and injury to recover more quickly. It is more enjoyable to use, it is portable, and it can be used almost anywhere at any time. This project makes use of an Arduino UNO and servomotor to move the knee joint in a controlled manner, with the user having control over the rate of movement as well as the degree of movement and the timer. Cloud monitoring will be add to save all patient movement setting each session. Patients can know how far they can bend the knee by taking note of reaching the degree of movement they have made. It also help physiotherapist to know how frequently the patient do an exercise The device will also be powered by Rechargeable battery.

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

AUTO KNEE MOVEMENT FOR REHABILATION

Name:MOHD ZHAFRAN HADRI BIN ZULKIFLI
Class:DEU5A
Matrix no:08DEU19F2014
SUPERVISOR:PN NAAGAJOTHI A/P ADIN NARAINA

DESCRIPTION OF INNOVATION (Problem statement)

Rehabilitation is necessary to prevent flexor tendon injuries or evade scarring and adhesion following surgery. Rehabilitation is performed manually by physiotherapists After knee operations, it is necessary to perform rehabilitation to recover previous dexterity. CPM device is widely used after knee surgery because it might prevent the stiffening of joints and allow recovering patients full functionality after surgery. Physiotherapists will use the knee CPM device to help the patient regain movement. There are certain issues that I discovered after studying the existing equipment. The knee CPM device, for starters, is a massive and hefty gadget. It will be tough for the user to carry it. Second, the current device can only be used with an AC power supply. As a result, the user must hunt for an AC power supply before the treatment can begin, which can be inconvenient

INNOVATION IMPACT

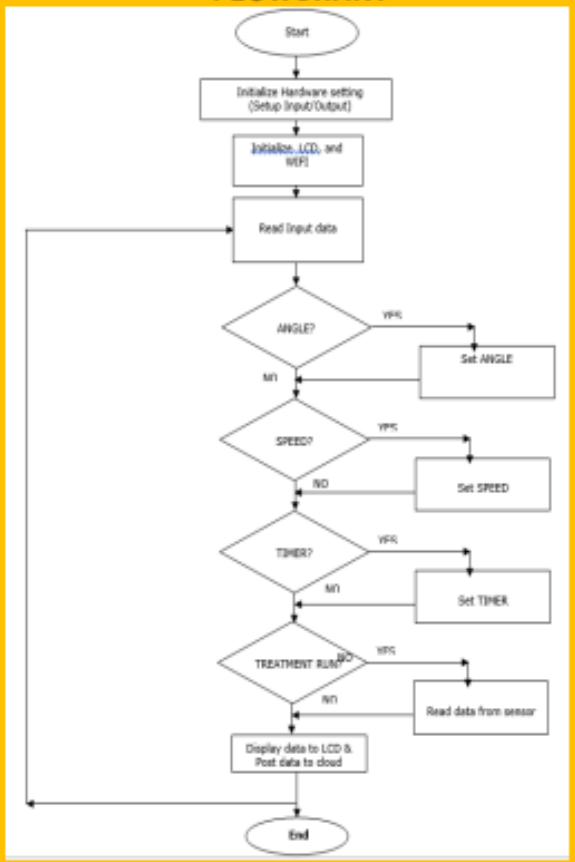
This project can provide patient with simple system for knee rehabilation, it is portable, and it can be used almost anywhere at any time. enabling patients suffering from stroke and injury to recover more quickly

OBJECTIVE

- To design mobile knee rehabilation for knee problem patient
- To develop rehabilation machine that help patient reducing the muscle stiffness, and supporting a range of motion by using of an Arduino UNO and servomotor to move the knee joint in a controlled manner, with the user having control over the rate of movement as well as the degree of movement and the timer

PROTOTYPE

FLOWCHART



SMART POST BOX

Puan Maslizah Binti Munahdar, Nurul Syazwa Azleen Binti Shamshiruddin

This project was implemented based on monitoring of current methods of mailboxes, mail that have been sent and placed in mailboxes that lost and abandoned by users. The objective of this project is to design a handy mailbox that can help to solve this problem. The scope of the research that have been set for this project is buildings such as condominiums, apartments, high-rise office buildings and shopping mall lot. There are several solutions for this issue which are users will be alert of the presence of parcel or letter and receives notifications through their phone. This project are using a " ARDUINO UNO " and also " GSM " material as a connector between sensors and battery. In addition, the battery is used to supply electrical energy for the mailbox to make it function. Next, the sensor used to detect the presence of the letter and parcel. When a letter or parcel is inserted into the mailbox, the sensor will detect the entry. The sensor alerts the GSM cloud to send the user a message through the message on the user's phone. As the results, the Smart Post Box has fully functioned and achieved the objectives as per discussed. Based on the survey that has been conducted, the Smart Post Box help users to solve the problems stated.

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

SMART POST BOX

POLITEKNIK SULTAN
SALAHUDDIN ABDUL AZIZ SHAH

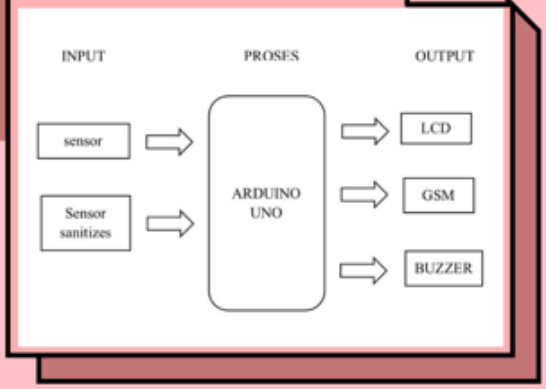
08DJK19F2009
NURUL SYAZWA AZLEEN
BINTI SHAMSHIRUDDIN

SUPERVISOR
MASLIZAH BINTI
MUNAHDAR

019-9778315
SYAZWA

nurulsyazwa16@gmail.com

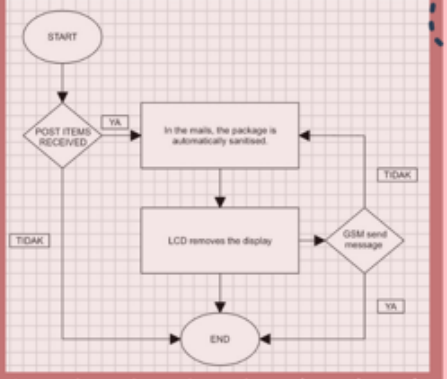
BLOCK DIAGRAM



ADVANTAGE

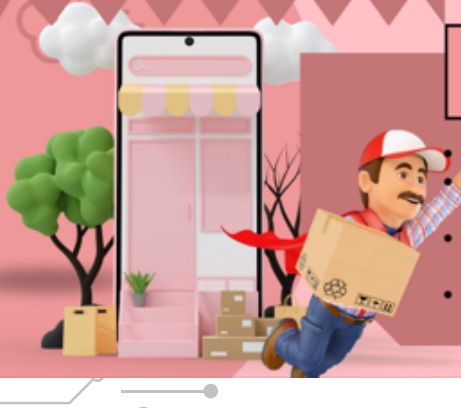
- The main advantage of using a smart mailbox to automate the work of checking mail is that it decreases the quantity of tiny activities that a person must consider in their daily life. The platform can also be improved with features that make receiving mail even easier for owners. This mailbox makes it easier for people who are so preoccupied with their jobs that they forget to pick up and read their vital letters.

FLOWCHART



OBJECTIVE

- Make it easy for people who aren't at home or who are at work to find out when their items have arrived.
- You will receive an SMS notification when the deliverv or letter is delivered to the mailbox.
- To design Smart Post Box automatically sanitize.
- To test evaluate whether the Smart House System is fully functioned.



PROBLEM STATEMENT

- Waste Time
- People busy with daily life
- The viruses can quickly infect everyone
- Anyone can steal the postage

KY- 039 BASED NON-INVASED BLOOD GLUGOSE MEASUREMENT TECHNOLOGY WITH IOT

Tuan Idris Bin Kamaruddin,Mohamed Nabil Firdaus Bin Mohamad Zamhari

Diabetes is a disease that occurs when your blood glucose, also called blood sugar, is too high ,if patient go to invaded glucose monitoring system can be lack of permanent cure and impractical ,expensive, painful measuring techniques are among the reasons for these alarming statistics ,this research focuses on finding a solution ,which is non- invasive ,portable, practical ,accurate, and cost-effective with the help of sensors and accessible technology platforms. The proposed system uses mode MCU as a microcontroller , one sensor unit. The method that we use for this paper is an .The arduino uno.Next, KY-039 sensor.The hardware device was built using NIR accompanied by a user-friendly mobile application,which can be accesible by patients of all ages. The comparative measurement was conducted between a certified commercial finger-pulse-oximeter and the proposed ESP32 embeded system with the MAX30100.Since this solution is non-invasive ,it provides a reusable and portable platform which can constantly monitor blood glucose levels conveniently in a painless manner without any repetitive costs. The developed device adapted the wireless technology and using smart phone which enable the use to view previous results of blood pressure at any time on the smart phone

KEMENTERIAN PENDIDIKAN TINGGI

POLITEKNIK MALAYSIA
Sultan Salahuddin Abdul Aziz

KY-039 SENSOR BASED NON-INVASE BLOOD GLUCOSE MEASUREMENT TECHNOLOGY WITH IOT

MOHAMED NABIL FIRDAUS BIN MOHAMAD ZAMHARI
08DJK19F2003

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

DESCRIPTION OF INNOVATION

Diabetes is a disease that occurs when your blood glucose, also called blood sugar, is too high. if patient go to invaded glucose monitoring system can be lack of a permanent cure and impractical, expensive, painful measuring techniques are among the reasons for these alarming statistics. This research focuses on finding a solution, which is non-invasive, portable, practical, accurate, and cost-effective with the help of sensors and accessible technology platforms.

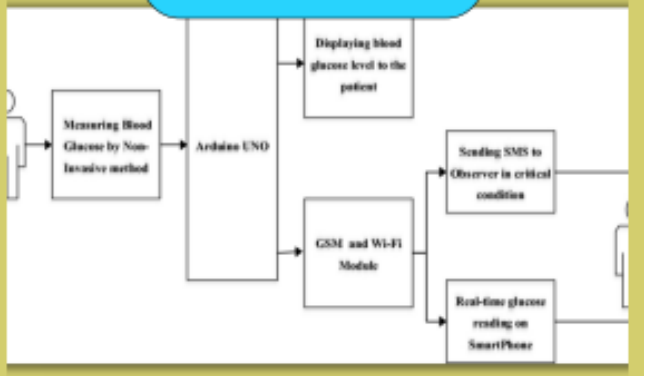
IMPACT OF INOVATION

This solution is non-invasive, it provides a reusable and portable platform, which can constantly monitor blood glucose levels conveniently in a painless manner without any repetitive costs. This solution will help patients to adjust medication based on their current blood glucose levels to reduce the unnecessary organ damage and additional costs incurred

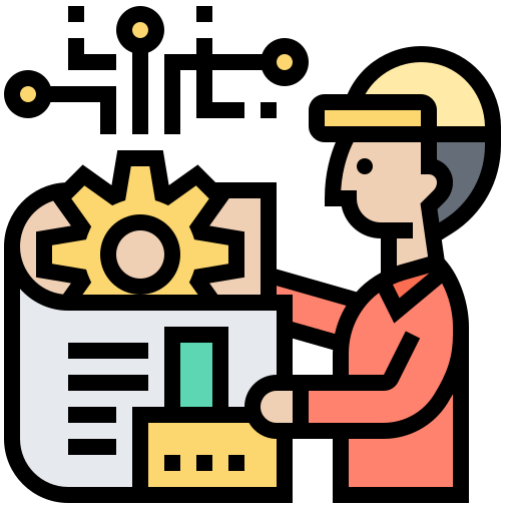
OBJECTIVE

- To develop a software for non-invasive glucose monitoring system.
- To develop hardware prototype for non-invase glucose monitoring system.
- To develop interface for non-invasive glucose monitoring system

BLOCK DIAGRAM



MECHANICAL ENGINEERING DEPARTMENT



DEVELOPMENT OF AIR VACUUM TECHNOLOGY

Dr. Mohd Elias, Mohd Hapis bin Mohd Tahir, Muhammad Hidayat Bin Muhd Rusydan, Alif Azuan Bin Azlan

The project is a tool that can detect smoke and inhale the smoke automatically and remove the accumulated smoke from such places as kitchens and places systematically enclosed with easy maintenance and can also control over telephone (IOT) manually and automatically. In addition, have a source of emergency energy supply. Our objective for this project is To study about the fire system especially the smoke that accumulates in an enclosed place in the house. In particular, in the home kitchen using vacuum technology that permeates smoke and emits smoke. In the home environment where smoke accumulates and it is difficult to remove. There is a need to develop and use portable smoke exhaust fans that can perform emergency ventilation in the event of fire fighting and rescue operations. The method used to solve this simulation problem was by using Fusion 360 software and making a prototype using cardboard. Air Vacuum Technology has many disadvantages in terms of the electronic components used. As a result of this method, it will make it easier for technological equipment to be quickly damaged if misconnected or misplaced. Therefore, it is necessary to study the components first so that there are no unwanted things such as damage to the installed components. Although at the beginning of the project there were some problems such as difficult usage as well as lack of safety features, the project could eventually be improved by replacing and adding the appropriate components. This project of course took a long time to meet the set criteria. With the cooperation given by each team member guided by the project supervisor, the project can be completed successfully. After various studies and experiments that have been done on this project can have a positive impact. Overall, the project has met the criteria and objectives of the project because it can facilitate the work of users in the production process. The system used is well received as it is easy to operate and maintain.

Development Of Air Vacuum Technology

BACKGROUND
Air Vacuum Technology is a device that can detect smoke and then inhale the smoke automatically and remove the accumulated smoke from the place systematically with easy maintenance. Can control via IOT phone and Has an Emergency Energy Supply Source.

PROBLEM STATEMENT
1) Based on study, conducted by Jos Sobral on (April 27, 2017) states that when facing a fire about one third of the safety systems do not work properly just because of the lack of inspection, test or maintenance of such systems.
2) When a fire occurs, the smoke of the fire accumulates in large amounts in the suction chamber when the fire occurs.
3) The flow of the suction system acts slowly and is easily damaged because the motor he is not heat resistant.

OBJECTIVE
1) To study about the fire system in the home kitchen.
2) To design a system that can help extinguish fires quickly and systematically in the event of a fire.
3) To develop air vacuum system technology.

SUSTAINABILITY VALUE
Good suction quality and faster suction is done.

POTENTIAL MARKET
The exhaust fan market is forecast to grow at a rapid rate during the forecast period due to special use in home kitchens

SAFETY
Exhaust fan air vacuum technology has a quick smoke angle to get out and has a cooler inside the wi-fi switch so it is not easily heated

DURABILITY
Exhaust fan that can heat resistant

RESULT AND DISCUSSION
The exhaust fan and Wi-Fi Switch must be selected precisely and suitable for connection with other components set to function and control properly. in addition, the smoke detector must be selected wire type in order to connect with the exhaust fan successfully.

IMPACT
All kitchen users at home are the target of the project. The main goal of this project is to design a system that can help remove fire smoke quickly and systematically in the event of a fire smoke fire in the kitchen.

PRODUCT DESCRIPTION

List of component:
- Screw packet (4)
- Smoke Detector
- Transformer (4)
- Plan Wood (4)
- Socket 3 Pin Plug (4)
- Cable (6)
- Wire
- Exhaust Fan
- Switch Wi-Fi
- Mini Fan (2)
- 3 core Power Supply
- Adapter (4)

Politeknik Sultan Salahuddin Abdul Aziz Shah
40150 Shah Alam, Selangor
psa.mypolycc.edu.my


Mohd Hapis bin Mohd Tahir
Mhapis1506@gmail.com


Muhammad Hidayat bin Muhd Rasydan
Hidayatt081201@gmail.com


Alif Azuan bin Azlan
alifazlan76@gmail.com

DEVELOPMENT OF KITCHEN FIRE SYSTEM

Dr. Mohd Elias, Siti Nursyakira Binti Mohd Anuar, Nur Aina Sofea Binti Azali, Farah Izatie Binti Jaferidin

When cooking on a gas stove, the food or oil in the pot or pan may catch fire due to the high temperature. Furthermore, people may be unsure if they turned off the gas stove before leaving home and thus feel forced to come home to double-check. To address these issues, researchers created a smart kitchen fire prevention system with the following devices and functions. Above the stove, sensors are mounted. They immediately engage the gas shutoff device to switch off the gas supply when they detect flames, excessive temperatures, or a gas leak. To alert residents, the alarm emits a loud sound and lights. The Line reporting system transmits line messages to residents and the community management centre, and the main entrance door is unlocked automatically to allow relevant employees to enter the residence to deal with the mishap. In the kitchen, an Internet protocol camera has been installed so that inhabitants may monitor the gas burner using their mobile phones. If the gas stove is still turned on, they can use their phones to activate the gas cut off device, which will turn off the gas supply. The conclusion is the design and implementation of the Kitchen Fire System is adaptable and flexible based on our project. This wireless detection technique is more cost effective than the typical market's current fire detection devices. This Kitchen Fire System detection framework has a high precision rate and responds quickly. All upgrades will be performed in order for this project to provide additional benefits and advantages. I hope that this initiative will continue to grow in scope for future generations. Last but not least, the approach created in this study can significantly reduce the amount of money lost as a result of a kitchen fire.

DEVELOPMENT OF KITCHEN FIRE SYSTEM

BACKGROUND
Demand for the design new technology for kitchen fire system users is rapidly in many kinds of innovation and huge potential.

PROBLEM STATEMENT
1. Many fires occur due to cause residential buildings in the cooking area.
2. No specific requirement by the fire department such as don't have a fire extinguisher and sensor at home.

OBJECTIVE
1. To make sure the system has alarms to detect fire and smoke .
2. To make sure this system automatically extinguishes fires.
3. To send notification automatically to the owner and fire department.

POTENTIAL MARKET
Buildings that related of kitchen such as residential building, restaurant and hotel.

SUSTAINABILITY VALUE
Labor cost saving, good for environment and safety in operation.

SAFETY
Kitchen fire system are the fastest way and safety for fire at kitchen that can't be reach by a human.

DURABILITY
For the long term.

IMPACT
These systems automatically activate when they reach a certain temperature allowing water to flow and put out a fire.

RESULT AND DISCUSSION

Distance sensor with fire	Time taken for sensor detection
15cm	3 second
20cm	6 second
30cm	10 second

The water pump starts when the pressure in the fire sprinkler system drops below a certain set-point. The sprinkler system pressure reduces when one or more fire sprinklers are subjected to heat over their design temperature and open, the pressure switches send a signal, and the duty pump begins.

PRODUCT DESCRIPTION

List of component:
- ESP8266 WIFI
- JUMPER WIRE
- R385 D12V METER TUBE
- R385 D12V PUMP
- SOLDERLESS
- ARDUINO
- BUZZER MODULE
- SINGLE 5V RELAY
- USB POWER BOOST LINE : 12V
- MICRO USB
- BOX
- POWERBANK

Siti NurSyakira binti Mohd Anuar
syakirakiera753@gmail.com

Nur Aina Sofea binti Azali
ainaazali36@gmail.com

Farah Izatie binti Jaferidin
farahizatie01@gmail.com

Politeknik Sultan Salahuddin Abdul Aziz Shah
40150 Shah Alam, Selangor
psa.mypolycc.edu.my

DEVELOPMENT OF SMART PLC TRAINING KIT

Dr. Mohd Elias, Muhammad Hakim Bin Hamzah, Muhamad Iznain Bin Muhammad, Nur Alia Syahirah Binti Hasmizi

Our group has chosen the title Development Smart PLC Training Kit for our final year project. Development Smart PLC Training Kit is a training kit that can help and share to students to find out information about PLC and IOT that we have improved. Based on this training kit, target users consisting of students are expected to improve their knowledge of programmer logic controller (PLC). Students can add knowledge with training kits easily without using many other components. The problem faced by students about this plc training kit is that the first is the difficulty in understanding the basic concepts of lessons taught by teachers. Secondly, the existing training kits cannot meet the needs of course content and misunderstandings among students due to limited training kits. The last is the Lack of training kits in the laboratory. The results obtained from the methodology used are from feedback from users collected through qualitative and quantitative methods such as questionnaires, interviews, and so on. The result is that more than 90% agreed to create this Smart PLC Training Kit in their place of study. The PLC Training Kit that we have improved can attract students to learn plc because it does not require many wires to connect the input and output of the plc and we have provided a module for the use of this PLC training kit compared to the existing plc training kit before which has non -detailed modules. In conclusion, this PLC training kit can help students and instructors to more easily understand the basic concepts of plc in detail by using the concept of Internet Of Things (IOT) so that they better understand clearly.

DEVELOPMENT OF SMART PLC TRAINING KIT

Politeknik Sultan Salahuddin Abdul Aziz Shah
40150 Shah Alam, Selangor
psa.mypolycc.edu.my

BACKGROUND

Development of Smart PLC Training Kit is a circuit experiment kit which can help people to understand how to run such as lamp,led light,fan and many more using method Internet Of Things (IOT) in smartphone.

PROBLEM STATEMENT

1.Difficulty in understanding the basic concepts of lessons taught by teachers.
2. Lack of training kits in the laboratory.
3. Existing training kits cannot meet the requirement of the course contents and misunderstanding among students due to limited training kit.

OBJECTIVE

1. To develop a PLC training module towards the Stusent Centred Learning (SCL) approach for setup and configure the IOT.
2. To study the problem of learning methods on Smart PLC Training Kit.
3. To develop hardware and software toward SCL approach for teaching and learning of the PLC programming

POTENTIAL MARKET

Industries that related to Learning related such as institutions of higher learning and people who teach about electrical.

IMPACT

Great potential in facilitating learning. The solution is to target students who lack understanding of existing plc and are not at risk to students and instructors.

SAFETY

This PLC Training Kit only uses smartphones and circuits. it is safe to use because it does not harm the users.

DURABILITY

For 1 years and 5 month to services.

PRODUCT DESCRIPTION

Size box
Length = 1.2 meter / 3.937 feet
Width = 0.9 meter / 2.952 feet
Height=0.3 meter / 0.984 feet

List of component:

- Programming Logic Controller (PLC)
- Small fan
- Big fan
- Light bulb
- Box training kit
- Plug
- Cable
- White led light
- Smart phone
- Application smart life
- Barrier
- Wifi switch

SUSTAINABILITY VALUE

Energy efficiency. Safety in operation

RESULT AND DISCUSSION

Finally,we were able to successfully complete our final year project using 3 output namely led light, fan and lamp with connection PLC and V-BOX according on time. PLC Training Kit works that have been designed. We hope the PLC Training Kit can make it easier for students and instructors to learn more about this PLC Training Kit.


Muhammad Hakim Bin Hamzah
zul@gmail.com


Muhammad Iznain Bin Muhammad
taufik@gmail.com


Nur Alia Syahirah Binti Hasmizi
nuralia.syahirah30@gmail.com

SMART GAUGE V2

Encik Mohd Sharizan bin Mohd Sharif, Muhammad Afiq Daniel Bin Abdullah, Muhammad Syukri Bin Mohd Lofti, Abdul Khaleeq Bin Md Jamil

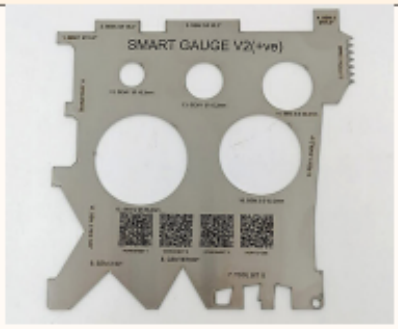
Smart gauges are produced to improve performance and effectiveness in tasks assigned in the workshop. The idea came from three semesters of experience in a workshop dedicated to be used as a gauge determinant to machining activities. The smart gauge objective is to help students to improve their skills and quality of self-learning outcomes and multiple use functions in one unit. This tool will be a convenience to mechanical engineering students to use it as practice grinding and making workpiece measurements more accurately. This will increase confidence and quality performance in their machine work. This tool can save a lot of students and lectures time to evaluate the work and the quality of practice produced in the workshop. Smart gauge can also help students creating work materials without lecturer reference because smart gauge version two can determine the accuracy of the workpiece. Therefore, by using stainless steel the smart gauge is not easily damaged and rusty. The literature review is based on previous tools, smart gauge have been improved by adding various measurements. As a process of forming this project, methodology review used to design the project created by application FUSION 360 and it is used as a guide for the machines involved in creating this project. QR codes are also implemented on the smart gauge as a reference to use for self -learning. The machines used to do cutting and engraved are the CNC cutting machine or the computer numerical control.

SMART GAUGE V2

MOHD SHARIZAN BIN MOHD SHARIF
JABATAN KEJUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH,40150 SHAH ALAM

PRODUCT IDEA

Smart gauges are produced to improve performance and effectiveness in tasks assigned in the workshop. The idea came from three semesters of experience in a workshop dedicated to be used as a gauge determinant to machining activities. The smart gauge objective benefits students in improving the skills and quality of self-learning outcomes



PRODUCT DESCRIPTION

- Size:119x119mm
- Thickness: 1mm
- Stainless steel
- Laser cutting
- Laser engrave

OBJECTIVE

- Test the accuracy of project measurements.
- Save time when making measurements.
- Improve quality.
- No need to ask the lecture while making a mechanical workshop practice 1,2 and 3.

PROBLEM STATEMENT

- The first version of smart gauge have an incomplete functioning and there are more usable options can be added.
- Smart gauge version 1 has an incomplete functions that students can't use for workshop task in three semester.
- With these new version of smart gauge, students may be improving quickly with the quality and functioning implemented to increase the number of functions in one unit.

RESULT AND DISCUSSION

The purpose of this smart gauge is produced similar to the first version but with this evolution it will be easier for students continuing to learn independently with the addition of few more parts in the smart gauge, so that all machine work can be included in one design.

GROUP MEMBER

Abdul khaleeq bin Md jamil
(08DKM19F2006)

Afiq daniel bin abdullah
(08DKM19F2029)

Muhammad syukri bin mohd lofti
(08DKM19F2026)

LATHE MACHINE SIMULATOR

Encik Mohd Sharizan bin Mohd Sharif, Nik Muhammad Haniff Bin Mohd Narang, Harisya Balqis Binti Wafidulfikri, Muhamad Nurhilmi Bin Salehhuddin

In the Mechanical Engineering field, lathe machine plays an important role in manufacturing. In this article, I am going to discuss the lathe machine in detail. A lathe is a machine tool which is used to remove unwanted metals from the work piece to give desired shape and size. Lathe machine is one of the most important machine tools which is used in the metalworking industry. It operates on the principle of a rotating work piece and a fixed cutting tool. The cutting tool is feed into the work piece which rotates about its own axis causing the work piece to form the desired shape.The problems that we discovered that has been a challenge are students are not well-prepared when entering the workshop session, students are unable to understand the process of operations on the lathe machine due to lack of lathe machines in the workshop and also students that cannot attend the workshop session will have difficulties to catch up with other students.For the objectives, we discovered that our goals for Lathe Machine Simulator are design a working lathe machine simulator, helping students or users understands and get the basic knowledge before doing the real machining session and improve the quality of the final product.While completing this project Fusion 360 software are used to make the workpieces meanwhile Scratch software on making the simulator and quiz. This approach has been successfully tested and implemented using actual data recorded by students of the Department of Mechanical Engineering, Politeknik Sultan Salahuddin Abdul Aziz Shah. The results of this implementation found that Lathe Machine Simulator can help students in recognizing and learning about lathe machines.

LATHE MACHINE SIMULATOR

POLITEKNIK MALAYSIA

PRODUCT IDEA

Polytechnic students' knowledge about lathe machine are limited. Therefore, we came up with the idea to help students have the basic knowledge and understand better about the lathe machine

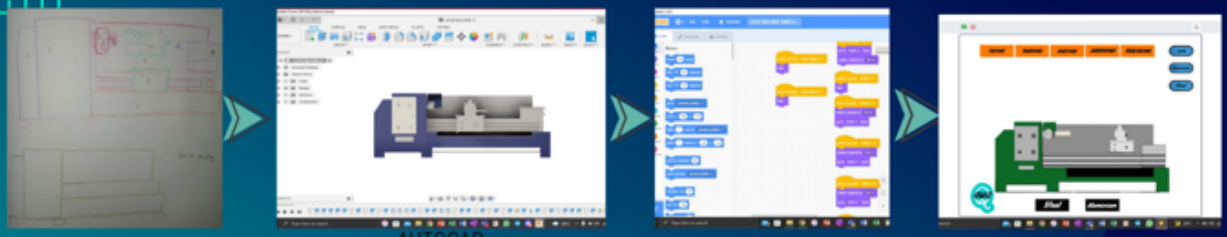
OBJECTIVES

- Design a working lathe machine simulator
- Helping students or users understands and get the basic knowledge before doing the real machining session
- Improve the quality of the final product

PRODUCT IMPACT

- Easier works for all semester 1,2 and 3 student , mechanical engineering diploma and all student in all polytechnics who are taking courses of machine workshop practice
- Students who take engineering courses at other institutions also can use this product include community college and other IPT
- Early knowledge for students before entering the workshop.

PRODUCT PROCESS



Raw sketch | AUTOCAD FUSION 360 DRAWING | coding | Result

GROUP MEMBERS

- NIK MUHAMMAD HANIFF BIN MOHD NARANG
- MUHAMAD NURHILMI BIN SALEHHUDDIN
- HARISYA BALQIS BINTI WAFIDULFIKRI

frrr632@gmail.com nurhilmimuhd@gmail.com harisyabalqis99@gmail.com

SPECIALTY

- Self learning
- Easy to access
- Replicate real - life experience

PRODUCT COST

CREATE SOFTWARE
RM 500

MILLING MACINE SIMULATOR

Encik Mohd Sharizan bin Mohd Sharif, Kirthana Devi Panerselvam, Nurul Sarah Binti Tajul Asikin, Vimel Raj A/L Veerapan

The idea of making a simulator was born out of the difficulty that the pandemic has brought for students, lecturers and institutions. A web-based simulator of a milling machine would help students to learn about machining work via virtual methods. The project objectives are to help students study and learn the basics of how to operate the milling machines. Some institutions, too, are able to solve the problem of not being able to provide enough machines for students. The project method started where background research is conducted with notes taken before proceeding to write the project introduction and problem statement, referring to the survey data collected as evidence. The objectives are then listed and written after finding the response to the problem statement that was written. Then, the project is progressed by project design where it begins with a rough sketch, refining the sketch, and making a 2D model until it is successfully created and refined. A literature review is written from studying data about other types of simulators and the data and analysis survey were conducted among students to gather its results. This milling machine simulator differs from others by process types including drilling, contouring, and facing. The materials used were cast iron, alloy steel, aluminium and bronze. The parts of a milling machine and a table of formulas to find the cutting speed, spindle speed, feed and feed per tooth were added in the reference section. Future improvements can be made to the milling machine simulator by sketching and making a 3D model of the machine because this current simulation is made in a 2D model. Overall, we can conclude that this milling machine simulator will be able to help users to gain basic knowledge of milling machine before operating the real milling machine.

MILLING MACHINE SIMULATOR

BACKGROUND

A 2D model web-based milling machine simulator that mimics the operation of a real milling machine which able to test different types of processes and materials used for a more immersive experience.

PROBLEM STATEMENT

1. Students are not well-prepared when entering the workshop and does not know the basics of milling machine.
2. Students are unable to attend workshop because of the Covid -19 Pandemic.
3. Lack of milling machines in some institutions.

OBJECTIVE

1. To create a functional simulator milling machine.
2. To help students or user to gain the basic knowledge of the milling machine before operating the real milling machine.
3. To improve the quality of project results.

RESULT AND DISCUSSION

We had successfully created a 2D model web-based milling machine simulator. The link to the simulator can be found in the website we made which also contains a theory and brief information on types of milling machine. The guide on how to use the simulator was also placed on the website. In the simulator, users can choose the operations and which drill head and materials to use to find the results from three type of processes (drilling, contouring and facing). A table of formula to find the cutting speed, spindle speed, feed and feed per tooth were also added in the reference section. We believe that this simulator will be able to help users to gain some basic knowledge of the milling machine before operating the real milling machine.

POTENTIAL MARKET

Department of Mechanical Engineering students and instructors from polytechnic and other institutions.

SUSTAINABILITY VALUE

Flexibility and self-paced learning. Real milling machine experiences. Cost-effective.

SAFETY

Lesser risk involved due to not practicing in mechanical workshop.

DURABILITY

Does not expire. No installation required. Low data usage.

IMPACT

All users that requires hands-on learning of a milling machine are able to try and learn this simulator before operating a real milling machine.

PRODUCT DESCRIPTION

List of softwares used to create the milling machine simulator:

1. Autodesk Fusion 360
2. Scratch
3. HTML Code for website
4. MediBang Paint

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Polytechnic Sultan Salahuddin Abdul Aziz Shah,
40150, Shah Alam, Selangor
psa.mypolycc.edu.my

Nurul Sarah Binti Tajul Asikin
nurulsarah432@gmail.com

Vimel Raj A/L Veerapan
vr7ace@rocketmail.com

Kirthana Devi A/P Pannerselvam
devikirthana2@gmail.com

FINGERPRINT SCANNER LOCKER

Puan Shariza Azwin Yahya, Fatin Nabilah Huda Binti Nasarudin, Logendran S/O Mahendran, MuMuhammad Naim Najmi Bin Mohd Nazri

Fingerprint locker is a locker that using biometric authentication for a more security lock. This helps the probability to having personal belonging getting stolen. Not only that, this also help a dorm admin to save more time when assigning student in a room as this fingerprint locker also equipped with iot technology. Nowadays using a pad lock have a risk of misplacing the key causing people unable to unlock the locker. With that, we as students of POLITEKNIK SHAH ALAM in the Mechanical Engineering division have developed a product to be used as a secure and easy to access locker. This tool is very useful to be used by various parties because it can prevent theft and save more time to access. We used Arduino as a main component for the fingerprint scanner to detect the scanner and give instructions to the lock. In order to set the Arduino, we need to program a coding in order to complete the fingerprint scanner locker and that is a challenge for us. We overcome that by asking help from friends to know about the coding and how it works and we also get some help to do the programming. We order most of the components from shoppe and we tested the quality. Although we faced a lot of challenges, we managed to overcome it and assembled our project.

Politeknik Sultan Salahuddin Abdul Aziz Shah
40150 Shah Alam, Selangor

FINGERPRINT LOCKER

Background

Produce a biometric authentication with iot technology for easy access locker

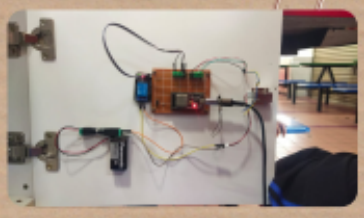
Problem statement

- personal belonging getting stolen
- takes time to access locker using padlock
- takes time to manage which room available

Objective

- prevent theft with a more secure lock
- easy access locker
- more efficiency in dorm management

Result and discussion



The fingerprint locker can be access using fingerprint that has been input in to the system. This save more time to unlock the locker compared to padlock. On the other hand, the admin that manage the dormitory can identify which room that unoccupied

Potential Market

Any education institute with dormitories

Sustainability value

Save more time to access the locker and more secure keep important belongings

Safety

- biometric authentication using fingerprint that can't be duplicate by other people

Durability

Particle board locker

Impact

Produce a biometric authentication with iot technology for easy access locker

Product description

List of component :

- fingerprint scanner
- wifi/bluetooth esp32s dev-kit
- relay module 1 channel 3v low trigger
- donut board 7cm x 9cm
- terminal block
- slide switch

FATIN NABILAH HUDA BINTI NASARUDIN
08DKM19F2001

MUHAMMAD NAIM NAJMI BIN MOHD NAZRI
08DKM19F2010

LOGENDRAN A/L MAHENDRAN
08DKM19F2027

PORTABLE WATER COOLER

Puan Shariza Azwin Yahya, Muhammad Izzul Aiman Bin Mahazan, Muhammad Adham Bin Abu Zaid, Muhammad Danish Aqil Bin Zaharudin

In the existing market,the product for cooling water are designed huge size and need high power supply to be operate. With this design, it will be barrier for people who are in camping , or any situation that don't have power supply to cooling water . In this project , we have design a water cooler that can be powered by using Power Bank and ergonomic for the user . Beside that , The primary aim of the project is to design and implement Portable Water Cooler which helps to ease user to cool water in any situation. In this project we have designed a prototype which can perform cooling without supply plug and can be powered by Power bank . We shall discuss regarding its Design and various other approaches involved to accomplish on this project. In addition , the material we use in this project is stainless steel that can keep your water cold and will be work efficiently , safety and ergonomic for the user . Stainless steel is better than glass for a water bottle when it comes to durability, insulation, and resistance to high impact. Objective of this project is to ease user cold water in any situation , easy to carry at outside activities , less power consumption and high efficiency . The problem that have in current product is need power supply plug , not suitable for camping or outside activities , High power consumption , heavy and hard to carry . For the improvement on the next project , we should improve in the safety such as the wiring and other else . Besides that , we will improve the technology with the temperature lock and extra power storage for backup of power source .

PORTABLLE WATER COOLER

POLITEKNIK MALAYSIA
Sultan Salahuddin Abdul Aziz

MUHAMMAD IZZUL AIMAN BIN MAHAZAN (08DKM19F2015

MUHAMMAD ADHAM BIN ABU ZAID (08DKM19F2016)

MUHAMMAD DANISH AQIL BIN ZAHARUDIN (08DKM19F2024)

BACKGROUND

THE PRIMARY AIM OF THE PROJECT IS TO DESIGN AND IMPLEMENT PORTABLE WATER COOLER WHICH HELPS TO EASE USER TO COOL WATER IN ANY SITUATION. IN THIS PROJECT WE HAVE DESIGNED A PROTOTYPE WHICH CAN PERFORM COOLING WITHOUT SUPPLY PLUG AND CAN BE POWERED BY POWERBANK

PROBLEM STATEMENT

THE PROBLEM OCCURRED IN EXISTING WATER COOLER :

1. NEED POWER SUPPLY PLUG
2. NOT SUITABLE FOR CAMPING OR OUTSIDE ACTIVITIES
2. HIGH POWER CONSUMPTION
4. HEAVY AND HARD TO CARRY

OBJECTIVE

OBJECTIVE OF THIS PROJECT IS :

I. TO EASE USER COLD WATER IN ANY SITUATION
II. EASY TO CARRY AT OUTSIDE ACTIVITIES
III. LESS POWER CONSUMPTION AND HIGH EFFICIENCY

PONTENTIAL MARKET

PORTABLE WATER COOLER IS EASY TO USE AND VERY EFFICIENT WITH ANY SITUATION , ESPECIALLY FOR STUDENT AND CAMPER . THE PRODUCT FOR COOLING WATER ARE DESIGNED HUGE SIZE AND NEED HIGH POWER SUPPLY TO BE OPERATE. WITH THIS DESIGN, IT WILL BE BARRIER FOR PEOPLE WHO ARE IN CAMPING , OR ANY SITUATION THAT DON'T HAVE POWER SUPPLY TO COOLING WATER . IN THIS WE HAVE DESIGN A WATER COOLER THAT CAN BE POWERED BY USING POWER BANK AND ERGONOMIC FOR THE USER .

RESULT & DISCUSSION

TO COMPLETE THIS PROJECT , THE SAFETY FACTOR SHOULD BE THE PRIORITY . DO NOT ATTEMPT TO USE TEC1 PELTIER MODULES WITHOUT A FAN OR LIQUID COOLED HEAT SINK . HEATSINK IS A MUST FOR THE HOT SIDE . DUE TO EXTREME DTMAX TEMPERATURE DIFFERENTIALS , MODULE DAMAGE , FIRE OR OPERATOR INJURY CAN OCCUR WHEN SUFFICIENT THERMAL RESISTANCE IS NOT PRESENT .

PRODUCT DESCRIPTION

CHOOSING THE RIGHT MATERIAL IS IMPORTANT FOR THE PRODUCTIVITY AND EFFICIENCY OF THE WATER HEATER. THE MATERIAL THAT WE USE IN THIS PROJECT ARE

1. STAINLESS STEEL CONTAINER (304 STAINLESS STEEL FOOD GRADE)
2. HEAT SINK
3. PELTIER MODULE (TEC1-12706)
4. FAN (40X40X10MM)
5. 12V ,5AMP DC CONNECTOR
6. 12 VOLT 5 AMP SUPPLY

SMART WATER DEVICE

Puan Shariza Azwin Yahya, Muhammad Noor Arif Bin Mohd Saad, Mohamad Nubly Bin Ramli

Malaysia is a highly technological country. Moreover, high technology must be developed across all sectors. For instance, by creating Smart Water Devices to keep water clean in a much simpler way today. With this device can also cultivate the spirit and awareness in each community to love and keep the water clean. If this Smart Water Device is created, it can be used to filter and neutralize the pH of dirty water like muddy water, rust and others. Not only filters dirty water, even the device can turn off the water on its own. As a result, there is no concern for the use of water in everyday life. The cost of this device is not too high like other water filters in the marketplace. With this product can be owned by all walks of life throughout Malaysia. The existing cleaning tools are always used and have undergone several innovations. Smart Water devices have been designed in a modest and affordable cost. It is also very environmentally friendly as it does not use fuels that cause environmental pollution. Smart Water Devices are cleaning devices that help filter and save water in residential areas without using heavy labor. In conclusion, it can educate the community to be more disciplined in keeping clean and conserve environmental water for water pollution in Malaysia. Whether the community is able to maintain clean and conserved water. In return, we will be like other developed countries, such as Japan and Brunei.

MUHAMMAD NOOR ARIF BIN MOHD SAAD (08DKM19F2021)

MOHAMAD NUBLY BIN RAMLI (08DKM19F2017)

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 40150 SHAH ALAM,SELANGOR

SMART WATER DEVICE

BACKGROUND

Demand in design a new technology for fload valve rapidly in many kind of innovation and huge potential.

PROBLEM STATEMENT

- Water bills are rising due to water wastage.
- Water supply disrupted due to water pollution in water catchments or broken pipelines.
- Dirty water supply channeled to residential and domestic areas.

OBJECTIVE

- Produce water saving devices to avoid water wastage.
- Can reduce human labor and save time.
- Can isolate residual dirt or foreign matter in the water before being channeled into the catchment water.

PRODUCT DESCRIPTION

- PVC pipe.
- Water filter.
- Float valve.
- Long flexible hose.
- Standing for water filter.
- Needle valve

POTENTIAL MARKET

Cleaning and water saving company

BANEFIT

- Save water bill cost.
- Filtered water can be drink and used.

SAFETY

- Clean water avoids impurities.
- Materials can be recycled.

DURABILITY

Can be used for a long time

IMPACT

- Great potential in making water filling and cleaning work easier.
- Solutions to deal with dirty water and waste.

RESULT AND DISCUSSION

The observation I got by using this device is that this device can fill and filter water well. Filling water with a bucket takes less than 5 minutes with 5 liters of water.

SMART ELECTRIC LETTER/ PARCEL BOX

Puan Shariza Azwin Yahya, Amarudin Bin Basar,Mohamad Syaril Ezam Bin Zalizan

The Electronic Parcel Box/Letter Box is a project that we made for the people who like to shop online but far from their house,busy at work or worried about the letter or parcel condition.Nowdays, people are really lazy, busy, have own bussines or outstation (work) in daily life and doesn't have time to think about letter and parcel when their purchase in online shop .A problem that often occurs when shopping online is during delivery time, where the parcel sent is often thrown or placed anywhere if there is no owner at home. This can result in the goods being easily damaged, broken or make it easier for others to take the parcel without the owner's knowledge. The methods for solving the problems is using the Fusion360 to make the model of letter & parcel box and measure the height and length. For the body we using the plywood and. Also for the security system(auto-lock) and sensor for notification we equiped the Maker Uno plus, Cytron WiFi Shield Adruino ESP8266, Jumper Wire for Adruino male to female, lock control set, Infrared IR tracking sensor and wire. Caused by that, We make improvements in terms of safety and convenience for consumers who are concerned about their delivery goods.The conclusion is the security system that we put in our project work so well. However, there is something missing on that security system in our project. We hope soon the next generation will make a better mechanical innovation.

SMART ELECTRONIC LETTER/PARCEL BOX

1)Background

At the time of this pandemic many companies closed due to infectious diseases. Therefore many necessities and wants goods cannot be bought.So emerged an online shopping platform that can meet all demands. At the same time, there was a problem with the packaging of the goods that arrived. Like packages arrive when people are not at home, packages arrive when it rains and so on

2)Problem Statement

During delivery time, where the parcel sent is often thrown or placed anywhere if there is no owner at home. This can result in the goods being easily damaged, broken or make it easier for others to take the parcel without the owner's knowledge.

3)Objective

>To help people noticed there are letter and parcel inside their box.
>My know the letter and parcel though not at home.
>Applied a modern technology in our daily rutin.
>Make the item safe from thieves.

4)Scope

-For people who like to shop online.
-For people who are always busy with work or rarely at home.
-For all types of society.

Mohamad Syaril Ezam bin Zalizan
08DKM19F2003
DKM5A

Amarudin bin basar
08DKM19F2022
DKM5A

Politeknik Sultan Salahuddin Abdul Aziz Shah,40150 Shah Alam,Selangor
psa.mypolycc.edu.my

5)Impact

solution for to take care about the deliver goods

6)Potential Market

potential for residential area

7)Durability

weather resistant and durable

8)Safety

owner have the access to unlock the auto-lock system

9)SUSTAINABILITY VALUE

good security for the parcel

PRODUCT DESCRIPTION

List of component

1.Maker Uno plus
2.Cytron WiFi Shield Adruino ESP8266
3.Jumper Wire for Adruino male to female
4.Wire
5.lock control set
6.Infrared IR tracking sensor
7.Funiture Planner Wood line (kayu masak) 1x2x5ft
8.Playwood
9.Nippon paint for wood

PORTABLE SCAFFOLDING

En. Somchai A/L Enoi, Muhammad Hazeeq Bin Khairi, Muhammad Uzair, Megat Haikal Bin Mohd Alfian

Scaffolding is an equipment that used in construction site. In other words, the temporary platform used by contractors to perform work at high places. Contractors must a hire truck to bring the scaffolding to the project site. Contractor took a relatively long time to assemble the scaffolding. The objective of this project is to design a tool capable of accommodating humans to do work at high places for the use of small and medium contractors in the construction sector. In addition, there are several scopes of study that have been set in this project that is, make it easier for users to carry it using vehicles such as vans and cars. In addition, the user can use it easily, by opening the legs and adjusting the height to the desired height. Materials for this project should also have special features such as simplicity and cost savings. Based on the literature review conducted, cast iron and cast-iron plates are the most suitable to use because of their strong and durable characteristics. The design of scaffolding is based on folding table concept. we see that the concept of this folding table can be implemented in our design because it is in accordance with the requirements of our idea that is portable scaffolding. Methodological studies are conducted to plan the project production process by using flow charts as a guide for project production planning and testing. The testing was carried to test whether it is capable of withstanding human weight and easy to carry anywhere. it can hold a weight of up to 110 kilograms and the results shows that this scaffolding can withstand loads and is easy to carry anywhere and can be easily put inside of a standard car boot for example, Myvi and Proton Saga. Based on these results, the results of the analysis and discussions that have been conducted can be concluded that this portable scaffolding achieves the objectives that have been discussed. The importance and impact to consumers is that it is easy to use and saves energy and time because there is no need to rent and install scaffolding

PORTABLE SCAFFOLDING

Background

This scaffolding is an innovation that is adapted from a folding table to make a portable scaffolding that can be used by small and medium contractors.

Problem statement

- Contractors had to rent a truck to bring the scaffolding to the site.
- Take a long to open and install the scaffolding.
- High risk to remove the scaffolding that has built.

Objective

- To design the portable scaffolding to make it easier for small contractor to bring it to the site.
- To fabricate a portable scaffolding using cast iron.
- To test portable scaffolding by inserting it into its own vehicles such as car and van.

Muhammad Uzair
08DKM19F2004

Muhammad Hazeeq Bin Khairi
08DKM19F2025

Megat Haikal Bin Mohd Alfian
08DKM18F1200

Potential Market

Specifically for small contractors in the development sector

Sustainability Value

Save time to install, save cost and high mobility

Safety

The material used can reduce the effects of rust and the scaffolding is strong and suitable for small contractors

Durability

Scaffolding that has high mobility

Impact

Users can bring scaffolding by using their own vehicles, cars and vans and can save costs without having to rent every time they want to use scaffolding.

Product Description

Platform scaffolding 160cmx25cm
Hollow cast iron 4cmx4cm
Hollow cast iron 3cmx3cm
Hollow cast iron 6cmx3cm
Iron Plate
Handle
Steger
Height betwwen 80cm-125cm
Weight 25kg
Weight accommodated : 110kg

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

WHEELBARROW CYLINDER 2.0

En. Somchai A/L Enoi, Mohamad Ashraf Bin Mohd Yusof, Siti Khadijah Binti Salamuddin, Muhammad Firmanshah Bin Sapuan

In the field of mechanical engineering, this research tries to design materials that can assist such users. The goal of this research is to learn more about the issues that construction workers, farmers, and customers face when it comes to engineering. This issue arises from the replies of wheelbarrow users who have encountered back pain and difficulty unloading merchandise using a regular wheelbarrow. Most customers complain that the materials being transported are too little for a standard wheelbarrow. Ordinary wheelbarrow can unload a lot of material but pushing and unloading cargo takes a lot of work. Methods for solving simulation problems using AutoCAD and making prototype with ice cream sticks. For ease of movement, we modified the model from one to three wheels and attached a gas cylinder to the body frame to easily push the load out. Testing has been carried out to verify that our project can't unload the load from wheelbarrow properly. We discovered that this project has a number of issues, such as the wheelbarrow failing to fulfil our aim of unloading a load of 250-300KG it only able to unload around 50-100kg. This is because the cylinder that we put at frame is not suitable to place it. Furthermore, we expect that this wheelbarrow can be changed to satisfy user preferences by extending the filling capacity to allow it to carry more weight than a standard wheelbarrow. By changing the gas cylinder to hydraulic cylinder, expect to unload the load we wished. Elevating the wheelbarrow's handle so that the user does not have to bend over while pushing it. So, the conclusion of the results on this project shows that the study's goal of determining the wheelbarrow is easy to move was met. However, unloading cargo in ease was not successful. We hope that the future generation of mechanical engineering can be innovate this proposal.

WHEELBARROW CYLINDER 2.0

BACKGROUND

Transporter device or hand-propelled vehicle which is used to carry small loads by construction workers and gardeners. It was designed to make unloading easier.

PROBLEM STATEMENT

1)The user expends too much energy unloading the load from the wheelbarrow since he or she must push the wheelbarrow upwards to do it.

2)Often causing back pain due to lifting a heavy load to get out of the stroller

3)The quantity of products unloaded is minimal.

OBJECTIVE

1)Designing load unloading wheelbarrows

2)To unload cargo, build a wheelbarrow.

3)Testing wheelbarrows with the use of unloading

PRODUCT DESCRIPTION

List of components:

i. Dead tires (2unit 13inch) and flexible tire(8inch)
ii. Cylinder gas (40cm)
iii. Hinges
iv. Hallow rectangular mild steel (½ inch x ½ inch 4ft)
v. Round mild steel (20diameter 4ft)
vi. Wheelbarrow handles (2unit)
vii. Mild steel angle (½ inch x ½ inch 15ft)
viii. Welding rod
ix. Plate mild steel (8unit 2mm 1ft x 2ft)
x. Black spray (3 unit)

POTENTIAL MARKET

The global wheelbarrows market is predicted to expand at a rapid pace during the forecast period, owing to increased demand for wheelbarrows from the construction industry

SUSTAINABILITY VALUE

Reduce consumer load and unloading time

SAFETY

Because the front tire is flexible, this wheelbarrow has three wheels to make it easier for users to move around.

DURABILITY

Heavy duty wheelbarrow

IMPACT

All users in the agricultural, construction, plantation, and residential sectors are targeted by the project. The major goal of this project is to make users' lives easier by reducing the amount of work they must do.

RESULT AND DISCUSSION

Finally, the product generated is based on the problem statement that we faced and solved for this project's challenge. We were able to obtain crucial information to be absorbed into our research using all the strategies we used. The information we collected was analyzed to determine the efficiency of our research; it is feasible to develop creativity in generating more fascinating and useful protection because of our project. Preliminary findings indicate that this project has a lot of potential for development and is highly valuable, but it has not yet been tested in the plantation business, construction, or other areas. Based on our first findings, we have chosen to change the design to make it more successful. We hope that this effort will be useful in the industry.

Politeknik Sultan Salahuddin Abdul Aziz Shah

40150 Shah Alam, Selangor

psa.mypolycc.edu.my

Siti Khadijah binti Salamuddin
Sitisalamuddin47@gmail.com

Mohamad Ashraf bin Mohd Yusof
Ashrafmohd447@gmail.com

Muhamad Firmanshah bin Sapuan
Firmanisss10@gmail.com

LEG ACTUATED WATER TAP

En. Somchai A/L Enoi, Jeevan A/L Athigesan, Thanes A/L Athigesan, Abednego A/L Anthony Nathan

From the day our research started, we found that the handicapped who have no hands or other body parts faced difficulty in operating the ordinary water tap system by themself. However, the infection of bacteria from contact with the water tap also became their second major problem. So, the main objective of this research is to design a leg actuated water tap for handicapped toilets and help the handicapped use the leg actuated water tap by themself in a safe way. The concept idea of the project was designed for both handicapped wheelchair users and handicapped users who do not use wheelchairs with other disabilities. The concept of this mechanism is, that when the wheel goes on the wheelchair pathway, the pressure from the wheel activates the push valve. Then the water flows into the water tap as there is a delay time configured in the push valve. The leg actuated water tap is built by using stainless steel plates, a push valve, pipe connectors, a water tap, and a foot pedal. After completing the project, testing has been carried out on the residents of the Taman Tennamaram with a questionnaire survey. This research includes a review of the literature, data from surveys, site visits to the location study, and data analysis to writing this research report. From the analysis questionnaire, we can analyse that the leg actuated water tap is easier to use by the handicapped and also normal people. As the result, the information gathered from the methods above helps to build the leg actuated water tab. Hence, the purpose of this mechanism is to help the handicapped to wash their hand without any contact with their body through the water tab system is achieved. Perhaps, the mechanism of our project is easy to use for the handicaps, low pressure is required to activate the water system and people can perform individually to operate this leg actuated water tab. The suggestion for future upgrades is to give attention to the blind people to operate the water system by adding a few mechanisms which help them to operate the leg actuated water tab. Finally, this project is totally beneficial to handicapped users. With this project, the handicapped users can survive in their private space which is inside the toilet without anybody's help, and they have independency.

LEG ACTUATED WATER TAB

BACKGROUND OF THE PROJECT

The handicapped toilet is for the handicapped individuals who need to use the toilet. It is because handicapped individuals cannot use the normal ordinary toilet.

PROBLEM STATEMENT

- Handicap users without body parts such as hands
- Infection of bacteria from contact with the water tap

OBJECTIVE

- To design a leg actuated water tap for a handicapped toilet.
- To fabricate a leg actuated water tap for a handicapped toilet.
- To evaluate the efficiency and reliability of the project for the handicap toilet.

DISCUSSION

The survey and questionnaire methods are used to collect the data from the random people above helps to build the leg actuated water tab

RESULT

PROJECT DESCRIPTION

This project was the future solution for the handicapped user.

LIST OF MATERIALS

- Stainless steel plates
- Pvc pipes
- Sink
- Water tap
- Flexible pipes
- Foot pedal
- Stainless steel push valve

POTENTIAL MARKET

- Public handicap toilets
- Public toilet

HANDICAP FRIENDLY

- wheelchair users
- elbow crutches users

DURABILITY

- 80 % of our product is made of stainless steel.
- Big and heavy-duty push valve

SAFETY

Users can safely use the product without any contact with their body parts through the water tab system. It shows the users are safe from infection.

IMPACT

gives handicapped users independence within their own bathroom space.

KEMENTERIAN PENDIDIKAN MALAYSIA

POLITEKNIK MALAYSIA SULTAN AZLAN SHAH

POLYTECHNIC SULTAN SALAHUDDIN ABDUL AZIZ SHAH 40150 SHAH ALAM, SELANGOR

JEEVAN A/L ATHIGESAN
jeevang18892@gmail.com

THANES A/L ATHIGESAN
thanesathigesan@gmail.com

ABEDNEGO A/L ANTHONY NATHAN
abedanthony4@gmail.com

COMMERCE DEPARTMENT

RS CO BAG

Kenneth Emmanuel Thexiera, Nur Afrina binti Azhar, Lidiya Khairunnisa binti Mahadi, Rhoshan A/L Ravi, Madam Zakiah binti Othman & Mr Kaharuddin bin Osman

The Rs Co bag is an innovative product this bag is made from used materials or recycled materials that is used banner (canvas). The Rs Co company chose to create bags using recycled materials because we want to create awareness among the public about the importance of adopting 3R (Reuse, Reduce Recycle) practices in daily life so that the environment remains protected. The material we use in the production of this bag is canvas. This canvas is constructed by Flex Polyvinyl Chloride canvas (PVC). This PVC material is suitable as a bag because it is stronger and waterproof. This shows even though this bag uses recycled materials, but we still care about the material and quality of Rs Co bag. The Rs Co bag has its own unique features such as this bag has 3 compartments and 1 small pocket, so users can separate the items they buy according to suitability. In addition, the handle length is perfect for placing on the user's shoulder. Additionally, users can customize their name on this bag. It will look more personalized and exclusive. This bag does not have any pattern so it is suitable for use by both genders, whether male or female and for now this bag only comes with one colour option only which is white. With the main objective of the Rs Co bag was created which is to cultivate people to take care of the environment. So, we are confident, this Rs Co bag is able to attract the attention of the public with its own unique despite having a variety of colours, materials and bag designs on the market.

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

RS. CO. BAG

RHOSHAN A/L RAVI 08DPR19F2021
KENNETH EMMANUEL THEXEIRA 08DPR19F2007
NUR AFRINA BINTI AZHAR 08DPR19F2012
LIDIYA KHAIRUNNISSA BINTI MAHADI 08DPR19F2017
SUPERVISOR: Pn.Zakiah binti Othman
En .Kaharuddin bin Osman

INTRODUCTION

Rs Co was created in March 2022 by a group of marketing students who intended to create a recycling product innovation. We believe that used products can be recycled and have their own worth, which can help consumers save money while simultaneously protecting the environment. Because environmental conditions are becoming increasingly concerning, they believe that the preventive measures they are doing now will help to alleviate the problem.

METHODOLOGY

PROBLEM STATEMENT

In the modern day, the production and dumping of plastic has tremendously increased.This phenomena has created many dangers to our atmosphere such as the increasement of environmental pollution which creates alots of harm to mother nature and also this creation of plastic do also uses any harmful chemicals throught the process.As a solution, the reduction of the rate of plactic waste disposal is a must and also as from our side we have come up with an idea of changing the use of old banners to make a grocery or shopping bags.

PRODUCT CHARACTERISTIC

- Have three compartments
- Waterproof and sturdy
- Customized specification
- Lightweight

IMPLICATION

Community - Many people will get introduced to recycle and reused products, benefits of recycled and reused products, disadvantages of plastics, the effect that plastic causes to the environment and atmosphere and many more.

Country -the usage of this bag benefits the country in many ways. Investments in this recycled bag collection support a strong and diverse recycling manufacturing industry, which brings jobs and high wages to states and localities. The collection of recyclable materials is the first - the most critical link in a chain of economic activity. Investment in local collection infrastructure pays great dividends in supporting significant downstream recycling economic activity. Importantly, many of these R.S.Co bag manufacturers rely on a steady and consistent supply of recyclable materials generated from recycling programs

Enviroment- The usage of recycled items benefits the enviroment in many ways. recycled items helps in conserving energy as well as it reduce water pollution. moreover, greenhouse gases can also be reduced when the usage of recycled items increase. the usage of landfill can also be reduced by 35% approximately as most of the items are being refined snd converted into a new product.

OBJECTIVES

- TO INNOVATE PEOPLE USE ON RECYCLABLE.
- TO HELP FOR A BETTER AND HEALTHY ECO SYSTEM AND ATMOSHPERE.
- ENCOURAGE PEOPLE TO USE RECYCLE PEOPLE.

SCOPE

- The study of plastic waste and its damages towards the atmosphere .
- The collection of used banners,re-sketch alteration and the complete production will take few hours of time.

CONCLUTION

As a conclution,me and my team here are bring up the point of reducing the usage of plastic which will make our enviroment a better palce for everyone and this project we brought here may be a small step into changing the Big world into a better place.

TE FRUTA 2 IN 1 HEALTH FRUIT DRINKS

Nur Azwani binti Azami Murat, Ahmed Aidil bin Rahmat, Baizurah Lina binti Baharudin, Thaneswari a/p Rajasegaran & Puan Natasya Mariz binti Mohamed, Puan Belinda Bong Siaw Fong

Te Fruta is a type of 2 in 1 dried fruits health drinks. The ingredients used in this product are dried orange, dried pineapple, dried ginger, dried lemon and honey rock sugar (100% natural fruits cut into pieces). Te Fruta comes with 2 flavors and both flavors are citrus based. The first flavor is Lemon Ginger drinks. Lemon consists of various beneficial plants compounds, fiber and vitamin C. It can provide a range of health benefits such as support heart health, weight control, prevent kidney stones, protect against anemia, reduce cancer risk, and improve digestive health. In addition, Ginger is loaded with antioxidants, compounds that prevent stress and damage to the body's DNA. The second flavor is Orange Pineapple drinks. Apart from Vitamin C, an orange has other nutrients that keeps our body healthy. The fiber in oranges can keep blood sugar levels in check and reduce high cholesterol to prevent cardiovascular disease. Pineapple is a rich source of antioxidant that may reduce the risk of ailments such as heart disease and certain cancers. Nonetheless, Te Fruta is a substitute of medicines and it is also widely known as a good home remedy for common illnesses such as flu, sore throat, fever and many more.
Originally idea of Te Fruta is to promote the culture of healthy living. This is also in line with our Agenda Nasional Malaysia Sihat (ANMS) which has been launched by our Prime Minister on 11 November 2021. Healthy living culture can strengthen self-immunity to prevent diseases. It is crucial for everyone to cultivate healthy living with the Covid-19 virus by maintaining a healthy personal, family and community. Most of the Malaysians are living hectic and busy lifestyle. According to National Health and Morbidity Survey in year 2020, an estimate study shows that 54.2% of the Malaysian adult population is overweight or obese and contributes to high heart diseases rate. Te Fruta comes in instant cup with teabag filled with the dried fruits where consumer can consume by only pour hot water into the cup and ready to drink. This product indirectly can encourage people to consume more fruits in their daily consumption. The packaging is medium in size which is very compact to bring anywhere. It definitely provides a lot of conveniences to the consumers. The product will be distributed to the petrol station and R&R area as it served as on-the-go drinks. In line with company tagline "nutritious in one cup", we maintain the taste of real fruit without any preservatives and artificial flavors. Therefore, with the creation of this fruit-based product, it is hope that healthy & well-being lifestyle would be instilled in the Malaysian culture.

Supervisor: Puan Natasya Mariz Binti Mohamed
Puan Belinda Bong Siaw Fong
Student :Ahmed Aidil Bin Rahmat
08DPR19F2004
Nur Azwani Binti Azami Murat
08DPR19F2002
Baizurah Lina Binti Baharuddin
08DPR19F2006
Thaneswari A/P Rajasegaran
08DPR19F2016

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

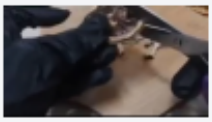
ABSTRACT

Te Fruta is a type of 2 in 1 dried fruits health drinks. The ingredients used in this product are dried orange, dried pineapple, dried ginger, dried lemon and honey rock sugar (100% natural fruits cut into pieces). Te Fruta comes with 2 flavours and both flavours are citrus based. The first flavour is Lemon Ginger drinks. Lemon consists of various beneficial plants compounds, fiber and vitamin C. In addition, Ginger is loaded with antioxidants, compounds that prevent stress and damage to the body's DNA. The second flavor is Orange Pineapple drinks. Apart from Vitamin C, an orange has other nutrients that keeps our body healthy. Pineapple is a rich source of antioxidant that may reduce the risk of ailments such as heart disease and certain cancers. Originally idea of Te Fruta is to promote the culture of healthy living. This is also in line with our Agenda Nasional Malaysia Sihat (ANMS) which has been launched by our Prime Minister on 11 November 2021. It is crucial for everyone to cultivate healthy living with the Covid-19 virus by maintaining a healthy personal, family and community. Te Fruta comes in instant cup with teabag filled with the dried fruits where consumer can consume by only pour hot water into the cup and ready to drink. This product indirectly can encourage people to consume more fruits in their daily consumption. The packaging is medium in size which is very compact to bring anywhere. The product will be distributed to the petrol station and R&R area as it served as on-the-go drinks. In line with company tagline "nutritious in one cup", we maintain the taste of real fruit without any preservatives and artificial flavors. Therefore, with the creation of this fruit-based product, it is hope that healthy & well-being lifestyle would be instilled in the Malaysian culture.

METHODOLOGY

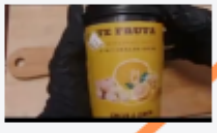
1) Firstly, cut the fruits into a pieces

2) Secondly, place all the fruits on the tray and heat the fruits (set the temperature on 150°c, heat top and bottom, set timer for 3-4 hours and flip every 1 hour.



3) cut the dried fruits into small pieces

4) Place all the dried fruits and honey rock sugar in tea bag



5) Put the filled tea bag into cup and close with lid

CONCLUSION

We focused on health in home remedies in this study. This study may be useful for Malaysians who want to live a healthy lifestyle. We want to reduce the number of people who are obese and encourage more Malaysians to adopt a healthy lifestyle in the easiest way possible.

RESULTS

THE SCREW SLAYER

Puan Mazharita Binti Mohamood, Puan Siti Salwa Binti Badiozaman @ Mohd Idris, Aniq Zulkhairi Bin Zulkefli, Masyita Binti M Meswan, Syahirah Nadzatul Aina Binti Salim, Nursya Wajihah Binti Shawaludin, Vishnuu A/L Kesavan

Our company NVAMA is an electronic company and the screw slayer our main product. This idea came when the problem pops up in workshop when doing 5S practise and cleaning process where we find out it difficult to isolating screw and garbage. Our target market is industry, since our product is a business-to-business product. This product is based on a garbage shovel design that incorporates an artificial magnet which can be controlled with a switch on the handle can snatch all metal tools such as screws, bolts, and nuts. Because our products are used to catch screws and nuts, we concentrate on industries that involve workshop work, such as car workshops, workshops in higher education institutions, and a variety of other industries, including the sewing industry. Next, NVAMA strives to market the screw slayer effectively by making various marketing tools such as using website, email and also joining a trade show to market and increase public awareness of our products. Therefore, with our products, we are confident that the industry can respond to the government's recommendations in ensuring that 5s practices are applied in the workplace and produce a comfortable workplace and always be in a neat and orderly condition.

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

SCREW SLAYER

Group Member:
ANIQ ZULKHAIRI BIN ZULKEFLI (08DPR19F2025)
MASYITA BINTI M MESWAN (08DPR19F2010)
SYAHIRA NADZATUL AINA BINTI SALIM (08DPR19F2028)
NURSYA WAJIHAH BINTI SHAWALUDIN (08DPR192005)
VISHNUU A/L KESAVAN (08DPR19F2013)

Supervisor:
SITI SALWA BINTI BADIOZAMAN@MOHD IDRIS
MAZIHARITA MOHAMOOD

NVAMA

ABSTRACT

Our company NVAMA is an electronic company and the screw slayer our main product. This idea came when the problem pops up in workshop when doing 5S practice and cleaning process where we find out it difficult to isolating screw and garbage. Our target market is industry such as workshop, factory since our product a business-to-business product. This product is based on a garbage shovel design that incorporates an artificial magnet to catch all metal tools such as screws, bolts, and nuts. Because our products are used to catch screws and nuts, we concentrate on industries that involve workshop work, such as car workshops, workshops in higher education institutions, and a variety of other industries, including the sewing industry, where we believe this product can assist them in implementing 5S practices in their workplace.

METHODOLOGY

Switch Battery Copper Wire Garbage Shovel

Packaging

IMPACT

- The goal of this project is to encourage peoples to use the 5S method in the workplace
- We believe that this project can produce a neat and orderly workplace and then produce more efficient work results
- Accidents at work can also be reduced when the 5S practice is successfully practiced with the help of our product
- When the 5S practice is practiced, it can create a harmonious and comfortable work environment for employees

RESULT

COMMERCIAL VALUE OF PRODUCT

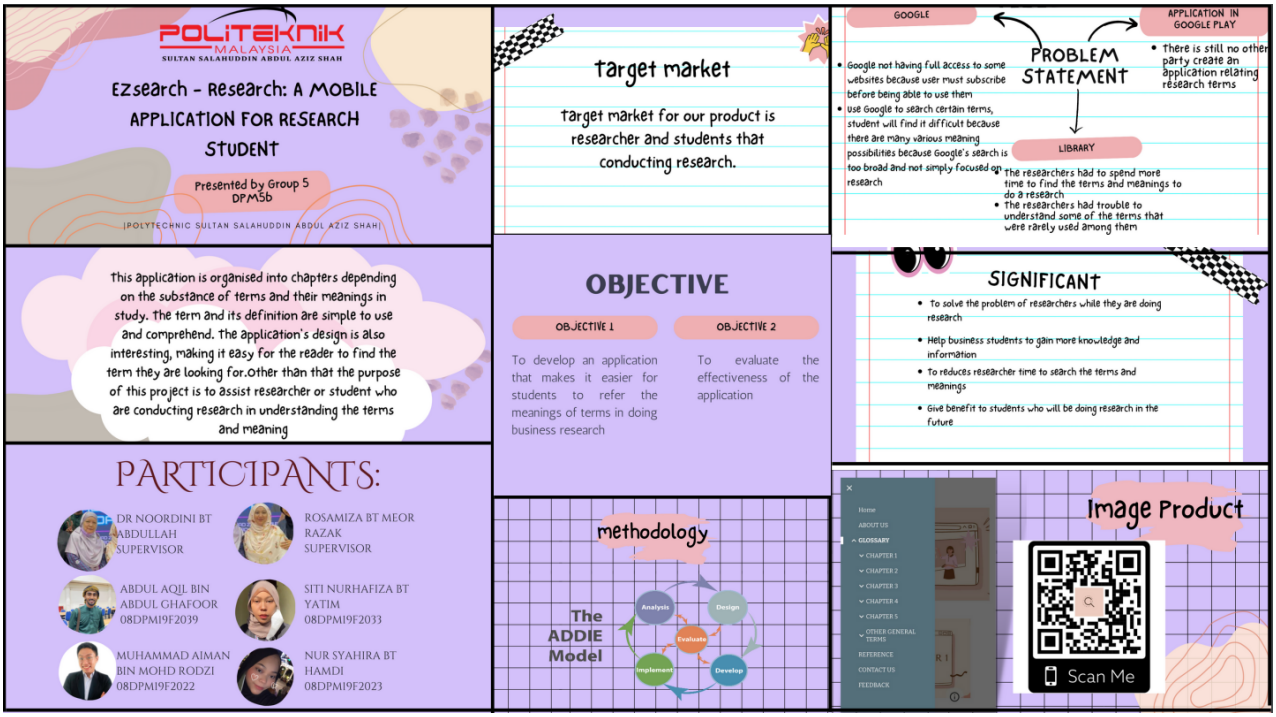
Functionality:
- Help various industry in 5S practice
- Artificial magnet could help people separating a nuts/bolt from garbage
- To make sure our workplace in neat and tidy condition

Features:
- Can control the artificial magnet with the switch from the handle
- A simple design and user friendly
- Save the user time to do a 5S practice

EZsearch-RESEARCH: A MOBILE APPLICATION FOR RESEARCH STUDENT

Abdul Aqil bin Abdul Ghafoor, Muhammad Aiman bin Mohd Rodzi, Nur Syahira bt Hamdi, Siti Nurhafiza bt Yatim, Noordini bt Abdullah, Rosamiza bt Meor Razak

The Covid-19 has caused schools and higher education institutions all throughout the world to close. As a result, education has undergone significant transformations, with the rise of e-learning, in which instruction is done remotely and via digital platforms. One of the consequences is that the students conducting the research are affected. Results from an initial study conducted by interviewing research students who had to spend more time looking up terms and definitions in order to do research. Choosing and comprehending the correct term is critical to ensuring that everyone in the same class uses the same term for the same subject. Apart from libraries, students have difficulty using Google since there are so many different meaning possibilities because Google's search is too broad and not narrowly focused enough. To address this issue, a mobile instructional application for research students has been created. This application is organized into chapters depending on the substance of terms and their meanings in study. The term and its definition are simple to use and comprehend. The application's design is also interesting, making it easy for the reader to find the term they are looking for. Based on the testing results, it can be determined that more than 80% of students agree that the application is simple to use and that the content and design are unique and easy to grasp. The effectiveness of application is also in good usability and good performance.


POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH
EZsearch - Research: A MOBILE APPLICATION FOR RESEARCH STUDENT
Presented by Group 5 DPM5b
POLYTECHNIC SULTAN SALAHUDDIN ABDUL AZIZ SHAH
target market
target market for our product is researcher and students that conducting research.
GOOGLE
PROBLEM STATEMENT
APPLICATION IN GOOGLE PLAY
Google not having full access to some websites because user must subscribe before being able to use them
Use Google to search certain terms, student will find it difficult because there are many various meaning possibilities because Google's search is too broad and not simply focused on research
there is still no other party create an application relating research terms
LIBRARY
The researchers had to spend more time to find the terms and meanings to do a research
The researchers had trouble to understand some of the terms that were rarely used among them
This application is organised into chapters depending on the substance of terms and their meanings in study. The term and its definition are simple to use and comprehend. The application's design is also interesting, making it easy for the reader to find the term they are looking for.Other than that the purpose of this project is to assist researcher or student who are conducting research in understanding the terms and meaning
OBJECTIVE
OBJECTIVE 1
To develop an application that makes it easier for students to refer the meanings of terms in doing business research
OBJECTIVE 2
To evaluate the effectiveness of the application
SIGNIFICANT
To solve the problem of researchers while they are doing research
Help business students to gain more knowledge and information
To reduces researcher time to search the terms and meanings
Give benefit to students who will be doing research in the future
PARTICIPANTS:
DR NOORDINI BT ABDULLAH
SUPERVISOR
ROSAMIZA BT MEOR RAZAK
SUPERVISOR
ABDUL AQIL BIN ABDUL GHAFOOR
08DPMI19F2039
SITI NURHAFIZA BT YATIM
08DPMI19F2033
MUHAMMAD AIMAN BIN MOHD RODZI
08DPMI19F2022
NUR SYAHIRA BT HAMDI
08DPMI19F2023
methodology
The ADDIE Model
Analysis
Design
Develop
Implement
Evaluate
Image Product
Scan Me

E-WASTE BIN

Ahmad Za'iem Bin Ahmad, Sametha A/P Kumaravel, Kausiliya A/P Raajan, NurAthirah Binti Zulkifli

E-waste has become a serious environmental concern for many governments due to the fast expansion in the usage of electronic products globally. Failure to recycle e-waste properly may cause environmental disasters and human health risks owing to toxic elements. This equipment is a complex assembly of thousands of harmful materials, including brominated compounds, poisonous gases, toxic metals, biologically active materials, and plastic additives. E-waste is poisonous and harmful if not properly managed, thus it's a problem. Due to the situation, e waste receptacle has been created for the community of Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) to toss away phones, cables, batteries, power banks, etc. To accomplish the project's aim, the key objectives are to design and construct an e-waste bin for environmental safety and well-being. In addition, the study attempt to introduce and access the use of e-waste bin among community in Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA). This study deployed the quantitative research approach to collect data from 150 PSA community using questionnaires. This study applied ADDIE Instructional Design method which stands for "Analyze, Design, Build, Implement, and Evaluate". It was found that most PSA community uses the e-waste bin to dispose of their e-waste in an ecologically responsible way. The results of this study should be helpful for local authorities, waste collection companies, and waste electronic organizations, to support design, location selection, and information campaigns for small e-waste container collections.

Key Words: E-waste, Environment

POLITEKNIK MALAYSIA
Sultan Salahuddin Abdul Aziz

KEMENTERIAN PENGAJIAN TINGGI

E-waste bin

E-waste is a popular,informal name for electronic products nearing the end of their useful life such as powerbanks,handphones,headphones,mouse and etc.Thus, an E-waste bin is created for the community in PSA dispose their e-waste in an ecologically way.

PROBLEM STATEMENT

E-waste has become a serious environmental concern for many goverments due to fast expansion in the usage of electronic products globally.

Failure to recycle e-waste properly cause environmental disasters and human health risks owing to toxic elements

OBJECTIVES

To design and construct an e-waste bin for environmental safety and well being.

To implement and evaluate the usage of e-waste bin among community in Politeknik Sultan Salahuddin Abdul Aziz Shah.

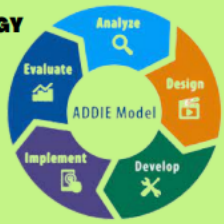
SIGNIFICANCE OF PROJECT

Reduce greenhouse gas emissions

Reduces business costs

Protects personal information

METHODOLOGY



TARGET AUDIENCE

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) community,staffs and students.

PRODUCT IMAGE

GRAPH RESULT "EVALUATION OF REDAIC"

THE WINNERS

JKM

- DEVELOPMENT OF AIR VACUUM TECHNOLOGY
- LEG ACTUATED WATER TAP SYSTEM
- DEVELOPMENT OF KITCHEN FIRE SYSTEM
- SMART GAUGE V2
- LATHE MACHINE SIMULATOR
- MILLING MACINE SIMULATOR
- FINGERPRINT LOCKER

JKE

- DRONE WITH IOT BASE SPEAKER ANNOUCEMENT
- WATER QUALITY MONITORING
- ZIKR LAMP FOR CHILDREN
- RFID STUDENT CARD ATTENDANCE PRIMARY SCHOOL
- SMART POST BOX

JPG

- RS. CO. BAG
- e-Waste Bin

JKA

- SMART APPLICATION HIGHWAY AND TRAFFIC DCC30103
- 'PRUCYTRUS' as coagulant agent in water treatment process

JKM

- SMART ELECTRONIC LETTER/PARCEL BOX
- DEVELOPMENT OF SMART PLC TRAINING KIT
- PORTABLE WATER COOLER
- SMART WATER DEVICE

JKE

- SMART HOME MAILBOX
- SOIL MOISTURE SENSOR
- ARDUINO AUTOMATIC GRASS CUTTER
- AUTO KNEE MOVEMENT FOR REHABILATION
- KY-039 SENSOR BASED NON-INVASE BLOOD GLUCOSE MEASUREMENT TECHNOLOGY WITH IOT

JPG

- SCREW SLAYER

JKA

- C&D INDICATOR SYSTEM
- PEMBANGUNAN LAMAN WEB EZ_EUROCODE 3
- SMART DUSTBIN INDICATOR
- SMART WATER TANK SENSOR

JKM

WHEELBARROW CYLINDER 2.0

10 PORTABLE SCAFFOLDIN

JKE

4 DEVELOPMENT OF AUTOMATED RESPIRATION RATE MONITORING DEVICE WITH IOTT

WATER QUALITY MONITORING

JPG

TRE FRUTA DRIED FRUITS DRINK

EZsearch-RESEARCH: A MOBILE APPLICATION FOR RESEARCH STUDENT

JKA

6 ENTERWAY SHOE RACK CABINET

7 SURVIVAL STAFF

8 SMART TANK MONITOR

9 KAJIAN MENGGUNAKAN ABU KELAPA SAWIT DALAM CAMPURAN KONKRIT

BEST AWARDS

BEST COMMERCIAL PRODUCT

JKA

'PRUCYTRUS' AS COAGULANT AGENT IN WATER TREATMENT PROCESS

Students:
HAZIQAH BINTI SALLEH
NUR FATIN BINTI JALIL

Supervisor:
PN. MASWIRA MAHASAn

BEST POSTER

JKE

ZIKR LAMP FOR CHILDREN

Students:
NURUL ATHIQAH BINTI WAHYUDI

Supervisor:
PN. ZABIDAH BINTI HARON

BEST VIDEO

JKM

DEVELOPMENT OF KITCHEN FIRE SYSTEM

Students:
SITI NURSYAKIRA BINTI MOHD ANUAR
NUR AINA SOFEA BINTI AZALI
FARAH IZATIE BINTI JAFERIDIN

Supervisor:
DR. MOHD ELIAS BIN DAUD

ACTIVITY HIGHLIGHTS


KEMENTERIAN PENGAJIAN TINGGI
POLITEKNIK MALAYSIA
MAJLIS PERASMIAN
PENUTUP
PSA INNOVATION
TECHNOLOGY
AND
COMMERCIALIZATION
TARIKH : 16 JUN 2022
PTEC 2.0
SESI 2 : 2021/2022
MINGGU TVET NEGARA
22:21


47:34
Request control
NR
NR
AA
NW


MZ
MOHAMED NABIL FIRDAUS BIN MOHAMAD ZAMHARI
58:32
Request control

e ISBN 978-967-0032-49-8

9 7 8 9 6 7 0 0 3 2 4 9 8

e-BOOK PSA INOVATION
TECHNOLOGY AND
COMMERCIALIZATION

PSA INNOVATION TECHNOLOGY & COMMERCIALIZATION

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
Persiaran Usahawan, Seksyen U1
40150 Shah Alam, Selangor Darul Ehsan.
Tel : +603-5163 4000
Fax : +603-5569 1903
website : https://psa.mypolycc.edu.my