POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

‘SMART CLOTHING AI MACHINE (SCAM)’

MUHAMAD ASYRAFF HAIQAL BIN MOHD RAMLI (08DKM20F1005)

MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN (08DKM20F1002)

NUR ISMA LIYANA BINTI NORLISMAN (08DKM20F1022)

MECHANICAL ENGINEERING DEPARTMENT

SESSION I: 2022/2023

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This report is submitted to the Department of Mechanical Engineering as fulfilling part of the conditions of the award
Diploma in Mechanical Engineering

MUHAMAD ASYRAFF HAIQAL BIN MOHD RAMLI (08DKM20F1005)

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AKUAN KEASLIAN DAN HAK MILIK

'SCAM'

1. We, **MUHAMAD ASYRAFF HAIQAL BIN MOHD RAMLI (NO.KP; 021018030463), MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN (NO.KP; 020106080255**) and **NUR ISMA LIYANA BINTI NORLISMAN (NO.KP; 020801140088),** are **Diploma Students in Mechanical Engineering, Sultan Salahuddin Abdul Aziz Shah Polytechnic**, whose address is **Persiaran Usahawan Seksyen U1, 40150 Shah Alam, Selangor**.

2. We acknowledge that "SCAM" and the intellectual property contained therein are my original works / designs without taking or copying any intellectual property from other parties.

3. I agree to release the ownership of the "SCAM" intellectual property to the Polytechnic to meet the requirements for the award of a Mechanical Engineering Diploma to me.

Diperbuat dan dengan sebenar-benarnya diakui oleh;

MUHAMAD ASYRAFF HAIQAL BIN MOHD RAMLI

(NO.KP; 021018030463) ……,

NUR ISMA LIYANA BINTI NORLISMAN

(NO.KP; 020801140088) ……,

MUHAMMAD SYAFIQ IKMAL BIN M.AMRRAN

(NO.KP; 020106080255) ……

Di hadapan saya,

SIR BRYAN HEE TZE KEON

Sebagai Penyelia projek pada tarikh …… ……

APPRECIATION

Bismillahirrahmanirrahim. Assalamualaikum wbt and Hello. First and foremost, praise be to Allah S.W.T for allowing us to complete the project report '**SMART CLOTHE AI MACHINE** ' in the allocated time with the support of collaboration and mutual assistance.

As a result, we'd like to express our gratitude to our project supervisors, Sir Bryan Hee Tzee Keon, for guiding and advising us from start to finish till we successfully submitted this final project report.

Then, thanks to a slew of pals who offered me suggestions for improvement. Finally, the panel of academics who contributed to the creation of this project provide a wealth of advice and suggestions that might help us improve our project report.

ABSTRACT

The project aims to ensured that clothes were in good condition and not wet when consumers were negligent in taking care of clothes for the sake of daily life. The objective of this project was produced to solve the problem of consumers living in multi -store buildings. Then, among the scope of the studied that had been set in this project was used rain sensors. This sensor was used to inform the output about the presence of rain according to the instructions programmed on the Arduino. Nowadays, commonly used hangers often happened to consumers when they were outside the home area. The benefit or difference in our project was, it had a motioned sensor which was a motioned sensor used to moved the suspension when it rains. With this, users could enjoyed life in peace. Finally, we used a methodological studied to planned the production process and used the flowed chart as a planning guide in testing the project.

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CHAPTER 1
INTRODUCTION

1.1 Introduction
(MUHAMAD ASYRAFF HAIQAL BIN MOHD RAMLI)

Because Malaysia was positioned on the equator, it experiences ram, state, and wet throughout the year. Wet months define equatorial regions throughout the year, and there was no changed between summer and winter as there was in temperature zones. However, owing of the multiple monsoons induced by changes in the direction and speed of airstreams, the climate of southeast Asia, where Malaysia was located, was considerably seasonal. Malaysia was seldom overly hot because it was mostly a tropical country. The environment was moderately hot and muggy, except for the highlands. The average temperature for each month of the year was between 20°c and 30°c. Malaysia had a tropical environment for most of the year.

On the peninsular Malaysian shore, however, the downpour was different. The rainy season on the west coast lasts from September to December, whereas the rainy season on the east coast lasts from October to February. Between the months of November and February, east Malaysia received torrential rainfall. The average annual total rainfall in malaysia ranges from 2400mm to 3200mm. The peak month in Malaysia was November through February, when the monsoon season began; however, in the west coast, august was the wettest month. In Malaysia, the days were generally warm while the nights were quite chilly. Furthermore, the average climate was always pleasant. As a result, every home should had an automatic clothesline to keep their garments dried on rainy days.

The project that we would did was a smart hanger where it combines mechanical and iot concepts to made it easier for users to lived their daily lived. Smart hangers were created more to keep clothes in good condition while the default user took care

of clothes. As we all knew, human beings often experience clothing problems especially when they neglect to did daily worked. With a smart hanger, this problem could been solved easily. The problem that could been solved by this smart hanger was wet clothes during rain. This hanger was equipped with a rain detector. If it rains, this detector would sent a notification to the user's phone so that they were sensitive to their clothes.

Next, this smart hanger was equipped with an iot adjustment system that we could adjust the position of clothes used apps, especially during rain. The special feature of this smart hanger was also, we combine smart hanger with rain protector. This rain protector serves as a detector to the user that the weather would rain which caused the protector to sounded and a notification would appeared on the phone. Finally, the smart hanger worked by moving forward and backward automatically when you pressed the app button that had been provided. In addition, the used of rain detectors was still not popular nowadays. Before this project was completed, we would made sure this project worked well. We chose this project to warned people out there that iot technology was becoming increasingly sophisticated. Our group, the target for this project was to leading companies and housewives.

1. 2 Project Background

Most people nowadays especially women would faced difficulty to picked lip their hanging clothes when it came to unforeseen circumstances such as rainy day. For instance, when women was busy with their other important worked or not available at that time, suddenly rain fell, and the clothes had been wet because of exposure to rain. For working people, they needed to worry of their hanged clothes that had been dried outside. Todays, people did not had ample time to managed their clothes as of many important things have been done daily. Thus, it may affect their time to did some chores, especially for houses that did not had maids or helper. This project focuses on the laundry and drying issue. The weather could changed instantly from hot sunny days to rainy days, as for those working away from their house which did not had any

helper or a working couple where it was hard to managed their laundry where the cloth was dried through the whole day without any proper protection. To reduce their problem, the project proposed an automatic clothesline. This clothesline had been able to detect the surrounding several rain, temperature, and light factors. If they showed any of these factors, the clothesline would moved into the chamber. Or else, it would remain outside under the given factors until the clothes dried naturally.

1. 3 Problem Statement

One of the difficulties that typically worried our thoughts during the rainy season, such as now, was the clothesline that never dries and even heaps up. Many of us finally decided to install a new clothesline in the house so that we may dried all of our clothing in a ventilated manner. Although it appeared have been powerful enough to addressed the problem of drying, health experts warned that drying clothing in the house, particularly in the house, was hazardous to one's health. Many individuals moaned about the rainy season because they were preoccupied with their daily lived. The garments on the clothesline was sometimes unable have been raised, resulting in the wetness of the clothes in the rain. Perhaps some people had a little area at home where they could dried their clothes. With the passage of time, sophisticated technologies in this situation must been present. It was feasible to solve people's concerns with everyday clothing management during the rainy season by developing new technologies. Smart clothing ai machines were instruments that could assist with rainy-day clothing issues. This difficulty was simply handled with a clever clothing hanger. A rain sensor was included into this clothing hanger. We also included an alarm with this clothing hanger. If it rains, this detector would sent a noticed to the user's phone and sounded an alert, making them aware of their clothing.

1. 4 Objective

this studied was conducted to achieve the following objectives:

• to solve the problem of users living in multi -storey buildings.

• to provided feedback to consumers on the condition of clothing according to the weather.

• to avoided wet clothes when exposed to rain.

1. 5 Project Question

1) how many times did you hung clothes every day?

2) do you had difficulty tying clothes when it rains?

3) do you had a suitable placed to put clothes hangers?

1. 5 Scope of the project

The studied's scope was limited in terms of what we could gathered, and the suspension period was limited to 5 to 20 articles of clothes every day. Clothing weight was limited to 10kg, therefore having a big family may been beneficial in resolving clothing issues. Furthermore, our idea aims have been acceptable for everyone who lived in a multi-story structure. Motioned sensors was used in the design and development of this device. According to the instructions programmed on the arduino, the motioned sensor was utilised to showed the desired output on the user's phone. We focused on the materials utilised for the user's comfort during the development of this product. That instance, stainless steel should been used to prevent corrosion from occurring quickly. As a result, this product may been customised to the user's preferences, and the projected costed was rm 250. 00.

1. 6 Importance of the project

The goal of this project was to made life easier for users, particularly those who lived in multi-story buildings. Dormitory students brought additional benefits in this endeavour as well. When students left their clothing to dried during the rain, this

might helped them felt less anxious about gone to class. In other words, pupils would received a phone notification that was transmitted from the sensor via an output that had been preset by the arduino.

1. 7 Definition of terms/definition of operations

The concept of this project was related to ensuring that clothes were in good condition and not wet when users were negligent in taking care of clothes for the sake of daily life. The project was to informed or feedback to consumers about the condition of clothing during rainy days. By naming this project smart clothe ai machine which means the iot system (internet of things) which was becoming increasingly sophisticated in the world.

1. 8 Project expectations

The expectation for our project was that it had been a sophisticated product that would generate a better response from external consumers than other products. Furthermore, our product or project needed a stamp that certifies that it may been utilised securely. Furthermore, we wanted our initiative to became progressively popular in every household. Finally, we hoped that our project had been beneficial to users and that it would spread to all corners of the globe.

1. 10 Summary

Finally, we could saw that this project was critical to the needed of the proper users. This was only available to users that reside in the multi-storey house, flat and school area. This was also the thought or notion that came to mind when trying to addressed this problem. Have been successful, this project must been carried out in the proper manner.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

(MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN)

Peninsular Malaysia and east Malaysia were divided by the South China sea in Malaysia's location in Southeast Asia. The nation was divided into thirteen stated and three federal territories. Malaysia was known to had a tropical climate, which implies that the country's average temperature typically ranges from 21 °c to 32 °c and the relative humidity was between 70 percent and 90 percent. Malaysia's temperature may increase by 3 to 5 °c by the end of the twenty-first century (teo wei hut,2014). When it was raining, people had a hard time getting home to picked up their clothes. The weather in Malaysia was erratic. It could rain in the morning and then been sunny in the evening (has-bullah, m. N, 2017). The main goal of this endeavor was to keep their cloth from getting wet in the rain. The purpose of the devised device was to save electricity by eliminating the usage of a laundry drier. This smart clothes ai machine (scam) drying rack was designed to made human worked easier by automating laundry collection based on light intensity (sunlight) and dampness (weather). When used this 'smart rack,' there was no needed for humans to picked their clothes during rain or dawn when used this system, which means this system could collected laundry before rain or nightfall, and it could put the laundry out to dried when there was sunlight. Nowadays, taller constructions, especially multi-story homes, were preferred due to the metropolitan population's rapid increase, the limited amount of available land, and the high costed of available land in Kuala Lumpur (s. P. Sharma,2015). As you knew, multi storey house had less space and it's hard to used big clothe rack. A clothes rack dryer, often known as a tumble dryer or just dryer, was a powered household equipment that removes moisture from a load of clothing, bedding, or other textiles after they had been cleaned in a washing machine. For fragile fabrics and other goods that were not suitable for a tumble dryer, a non-rotating machine called a "drying cabinet" might been utilized. By used smart clothing rack it could benefit consumers a lot. Smart clothing rack refers to shelves equipped with electronic devices or functions. A distinctive feature of this rack was that it gave 100% guaranteed to the clothe from contact with rain

2.2 CONCEPT/THEORY

(MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN)

As we knew, the used of smart clothe was increasingly talked in Malaysia as more and more people began to felt stressed with the often-wet cloth during the rain especially for those who living multi-storey house. As for this project, we would focus more on the temperature and rain factor. The temperature was investigated to get the average specific temperature before rainfall. This gave us opportunity to increasing trend of used smart clothe in Malaysia. On the paper, this development was very good as Malaysians were already familiar with something new and trendy and our neighbour had released the open concept of smart clothes rack and had been trending and with its functionality in Singapore. However, in our celebration of something good, there were a handful of individuals who disagreed with it. Usually when something was trending, the thing would to some extent received tempias, whether it was good or bad. Some of the full-time worker always took a risk to went backed home to save their clothe from getting wet. This would put lived at risk caused it talk about time.

2.3 FACTORS AFFECTING THE PROCESS OF DRYING CLOTHES

(MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN)

As you knew, most Malaysians worked late at night and lived in multi-storey houses. When it rained, they had to let their clothes got wet. But for those who wanted to used such clothes they were willing to went home simply to save their clothes. By doing these, it could put their lived at risk. Clothe liked their main thing in life. So, without clothe they can't did went out from their house. When their clothe getting wet, they had to used a dryer to dried the clothes and this would costed some money. This made them felt more stressed in their life.

the following were some of the most common caused of clothe getting wet:

1) The increasing temperature

- Every year, the increasing temperature had an impact on the rainfall and cloud formation conditions. Summer thunderstorms, for example, were more influenced by temperature than rain from larger, more widespread rain systems. Today's heavy rain had far-reaching repercussions for people, which could be exacerbated by hot temperatures. The amount of watered vapour in the atmosphere determines the amount of rain that fell in a heavy shower. The amount of watered vapour in the atmosphere increases as the temperature rose, increasing the likelihood of heavy rainfall

2) Raining period

- The features of a rain shower were highly influenced by the time period under consideration, which might range from five minutes to several hours or even days. The various types of precipitation were created in different process in the atmosphere. Rain-rate distribution and rain dropped size were important parameters used for reducing the prediction rate. There were three ranges of

rainfall thresholds which were 0. 1¬ lOmmihr were light precipitation, lO. l-30mmlhr moderate rainfall and more than 30mmlhr considered as heavy rainfall that was analyzed the rainfall over which Kuching, Sarawak. This was proved that most of the Malaysian people shirt always getting wet.

3) Type of clothe rack

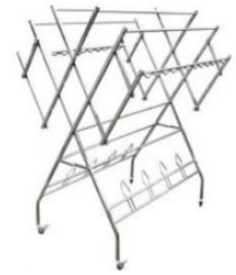
This was one of the most common caused of clothe getting wet. Clothe rack design affects the drying quality of the shirt. Some of them used a small clothe rack but put a lot of clothe.

2.3.2 AVAILABLE CLOTHE RACK IN THE MARKET.

(MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN)

The drying rack was already on the market, but it came with certain limitations. The drying rack was depicted in figure 2. 3. 3. The mounted drying rack was available in the market. It was a smaller, more adaptable version of the classic collapsible dryer rack. This device allows you to hang everything from a towel to intimates without taking up valuable floor space. The drying rack that called Smart Clothe Ai Machine (SCAM) was improved in this project with the addition of a sensor that detects wetness, light and alarm. Light dependent resistances (LDR) and a watered sensor was employed as sensors. The motor would revolve clockwise, and the rack had been pulled out when the LDR detects light, and the rain sensor detects no rain. 'attention' 'sunny day' had been displayed on the lcd. When the LDR detects no light or water sensor detects rain, the motor would rotate anticlockwise and the lcd would display‘raining’, ‘getting dark’ or ‘raining + getting dark’. Alarm were used to alert the owner about raining.

this was the listed of clothe rack in the market:

PRODUCT	MANUFACTURER	MATERIALS	FEATURES	COST
 ISANO Premium Quality Stainless Steel Clothes Drying Rack	Kuala Lumpur	Made of stainless steel	-Heavyweight -Adjustable -Can move anywhere	-RM 168.00
 LG Global Ceiling Mounted Lifting Drying Rack Cloth Hanger	Korea	Stainless steel	-Have lamp -Stick on the ceiling -Can move up and down	-RM 250.00

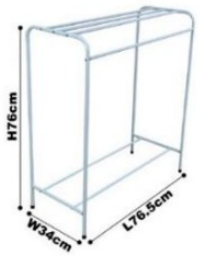
 Heavy Duty Stainless Steel Hanger	Overseas	Aluminium	-Have wheel -Heavy -A lot of space to hang clothe	-RM 150
 High Visibility Reflective Vest Jacket	Overseas	Aluminium	Too light Small space	-RM 138

Figure 2.3.3

Our smart clothe ai machine was designed to made human worked easier by automatically collecting clothing based on light intensity (sunlight) and moisture content (weather). The costed of developing the automatic drying rack was low, making it affordable to people of all socioeconomic levels. It would not squander time selecting clothing. It was suitable for the general population and environmentally friendly. This clever laundry drying rack would allowed you to wash your clothes every day in a comfortable manner while also protecting them from the elements. This simple smart rack may been used to removed perspiration, moisture, and odour from clothing. Complete with an air space by utilizing heat energy as a renewable energy source. It could helped you save money by lowering your electric

usage. Furthermore, it made human worked easier, particularly for housewives. Because this project relies solely on sunlight, the clothing appeared to took longer to dried. Aside from that, because these projects only supply certain rode, it had a restricted weight and capacity for hanging clothing on the rack. This project used a battery, which means that it was not as long-lasting as a project that used a DC power supply.

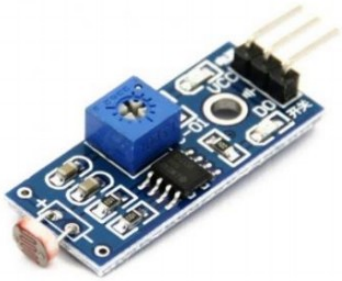
2.4 EQUIPMENT ON SMART CLOTHE AI MACHINE

(MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN)

In today 's available, time of the innovation was developed more family unit tasks was changed over to a modem ways. It was quite a while backed that the general population utilizes a ton of endeavors and devotion for their worked even there was a way to lessen their task every day. With this smart cloth ai machine it gave more opportunities to the customer, client and especially for student to gave a convenience on daily tasks and routine. In this studied, was to conduct an intensive researched that would helped people in modem era.

The listed of equipment’s and component that was used in this project were listed in table 2. 4. 1

EQUIPMENT	
	RAIN SENSOR
	NODE MCU ESP 8266
	PLAIN WOOD
	STAINLESS STEEL DRY CLOTHE RACK

	WELDING
	LDR SENSOR (Light Dependent Reactions)
	POWER WINDOW CONTROL
	LEAD BATTERY

2.4.2 RAIN SENSOR

Rain sensor was a rain-activated switching device. There were two main applications for rain sensors: one was for automatic irrigation systems, and the other was for automatic windscreen wipers. The goal of this worked was to design a rain detection system that used a rain sensor to detect rain. The rain sensor detects any rain that fell on it and then senses and performed the necessary activities. Arduino was used to controlled this system. The arduino uno board was sufficient to controlled and link the rain sensor. The sensor's movement, on the other handed, was controlled by a rain controlled module. As a microcontroller, the arduino uno board was used to controlled this module. "Processing development environment software" was used to process the signal from the sensor. The output was provided by the processing ide.

2.4.3 NODE MCU ESP8266

The ESP8266 is a low-cost Wi-Fi microchip, with built-in TCP/IP networking software, and microcontroller capability, produced by Espressif Systems[1] in Shanghai, China.

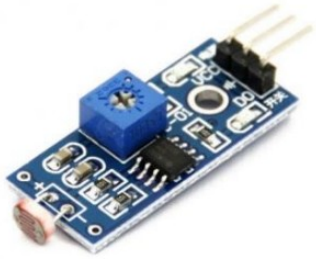
The chip was popularized in the English-speaking maker community in August 2014 via the ESP-01 module, made by a third-party manufacturer Ai-Thinker. This small module allows microcontrollers to connect to a Wi-Fi network and make simple TCP/IP connections using Hayes-style commands. However, at first, there was almost no English-language documentation on the chip and the commands it accepted.[2] The

very low price and the fact that there were very few external components on the module, which suggested that it could eventually be very inexpensive in volume, attracted many hackers to explore the module, the chip, and the software on it, as well as to translate the Chinese documentation.[3]

The ESP8285 is a similar chip with a built-in 1 MiB flash memory, allowing the design of single-chip devices capable of connecting via Wi-Fi.[4]

These microcontroller chips have been succeeded by the ESP32 family of devices.

2.4.4 LDR SENSOR (Light Dependent Reactions)



LDR sensor was a variable resistor of the passive electronic component typed, more precisely, a resistor whose resistance varies depending on the amount of light that strikes it. The resistance to light reduces as the intensity of the light increases. The LDR was made of a high-electrical-resistance semiconductor material. When enough photons were present in the light falling on the semiconductor, the semiconductor releases electrons into the conductive band, improving conductivity.

2.4.5 POWER WINDOW CONTROL MOTOR

The power window system was a switch-operated device for opening and closing windows. When the power window switch was activated, the power window motor rotates. The window regulator converted the power window motor's revolution into up and down motioned to opened or closed the window. The power window motor had four mounting positions throughout and operates on a 12V DC current.

2.4.6 LEAD BATTERY

Although advances and manufacturing technologies continued to enhance energy density, longevity, and dependability, lead batteries had been available since the 1880s. Flat lead plates were immersed in an electrolyte pool in an all-lead battery. The paced at which lead batteries self-discharge was determined by the storage or operational temperature. A lead battery would self-discharge at a rate of around 4% per week at 80 degrees Celsius. A battery rated at 125-amp hours would self-discharge at a rate of about five amps each week. Keep in mind that if a 125-ah battery was left uncharged for four months (16 weeks) during the winter, it would lost 80 amps of its 125-amp capacity, as well as suffer from severe sulfation, which caused additional capacity loss.

2.5 SUMMARY

(MUHAMMAD SYAFIQ IKMAL BIN M.AMRRAN)

In this chapter, an overview of the smart clothe ai machine project was presented, along with its benefits and drawbacks. Smart clothe ai machines were typically tailored to the demands of the user, particularly those who were overworked or lived in a multi-story home. As a result, evaluating various projects allows customers to made their own choices while designing the clothe drying rack. The clothe drying rack in this project was mostly focused on the rain sensor and light sensor system. As a result, the basic components were used to complete the project.

NAME: NUR ISMA LIYANA BINTI NORLISMAN (08DKM20F1022)

CHAPTER 3

METHODOLGY

3.1 INTRODUCTION.

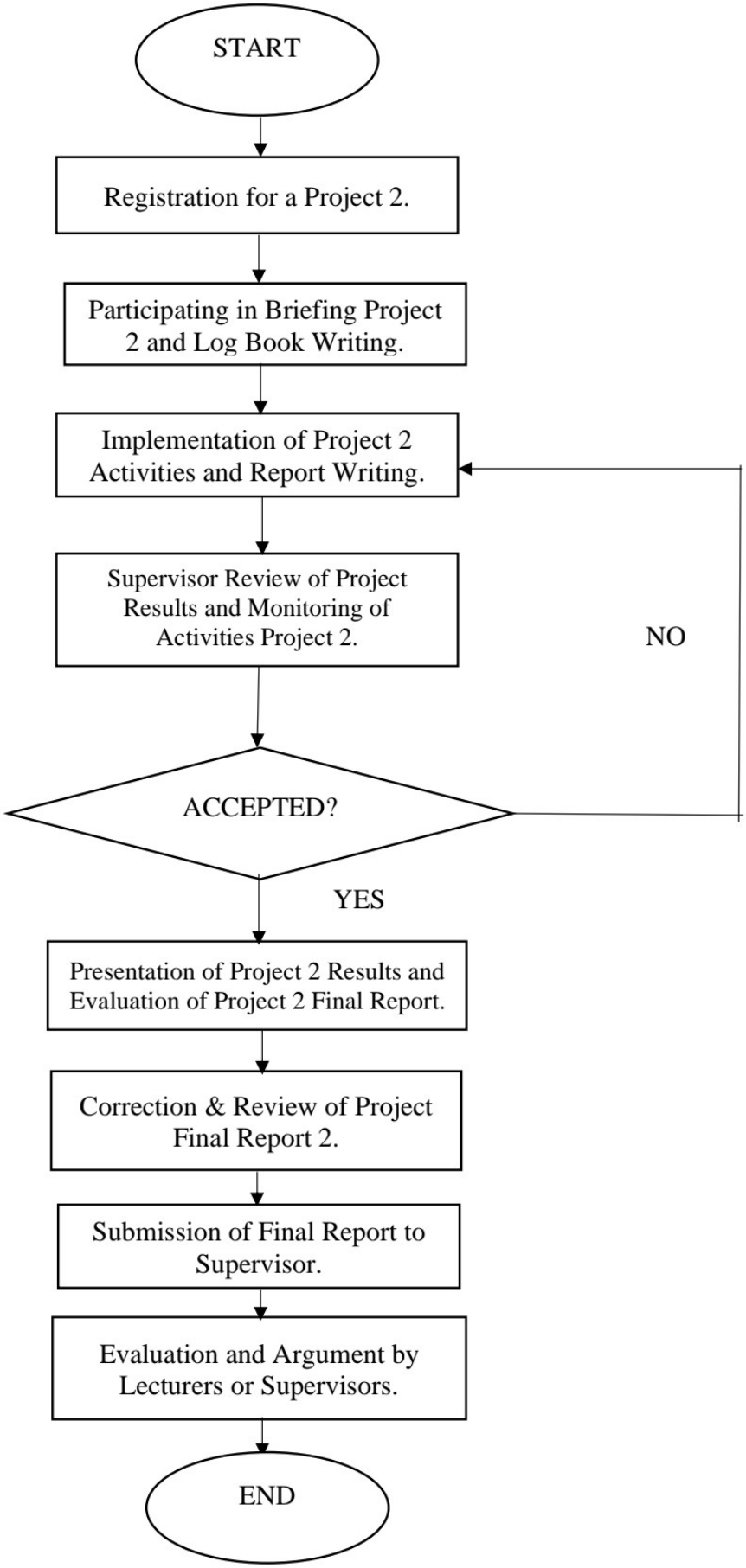
As consumers, we really needed something affordable nowadays. Everyone's usage of clothing hangers should been upgraded to made their everyday worked easier. In this chapter, we would went through our project in further detail and illustrate the materials we used after doing a material analysis. This chapter shows engineering design used inventor software, costed of materials, materials used, methodology and functionalities.

3.2 PROJECT DESIGN.

The title of this project was smart clothes AI machines (scam). We created this design to provide the community with advanced hanger clothes to hung their clothes after washing clothes. This design could also gave benefit to communities in saving energy while they did their daily activities. A rain detector was installed on this hanger. This detector would sent a notification to helped them have been aware of their clothing. The smart hanger had an internet of things (iot) adjustment mechanism that allows us to adjust the position of our clothes used an application which was useful when it was raining. This rain protector functions as a weather detector, notifying the user when it was gone to rain by sounding the protector and sending a notification on the phone. When you clicked the given app button, the smart hanger moved forward and backward automatically.

Figure 3.2.1

3.2.1 METHODS/PROCESSES/TECHNIQUES OF PROJECT PRODUCTION.



3.2.2 MATERILAS AND EQUIPMENT.

1) Engineering Drawing

Figure 3.2.2.1

Top View

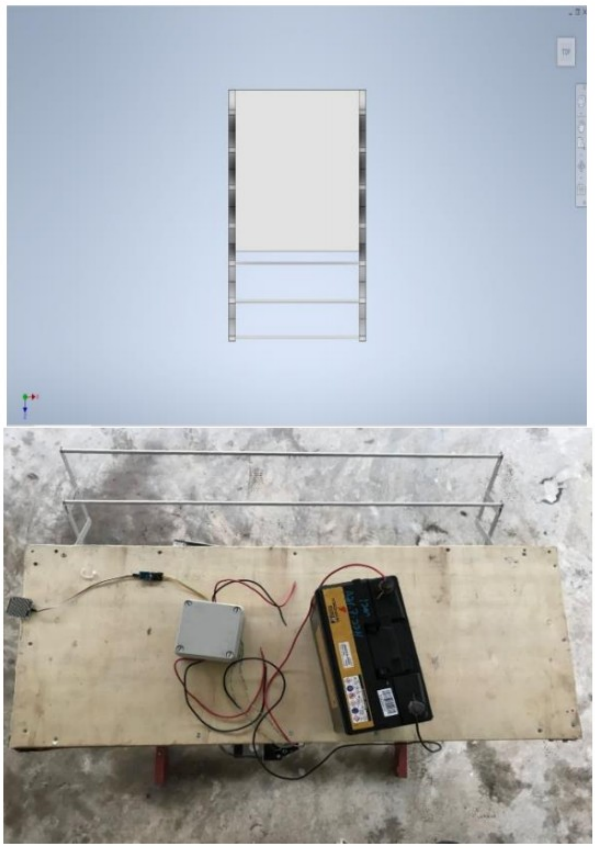


Figure 3.2.2.2

Side View

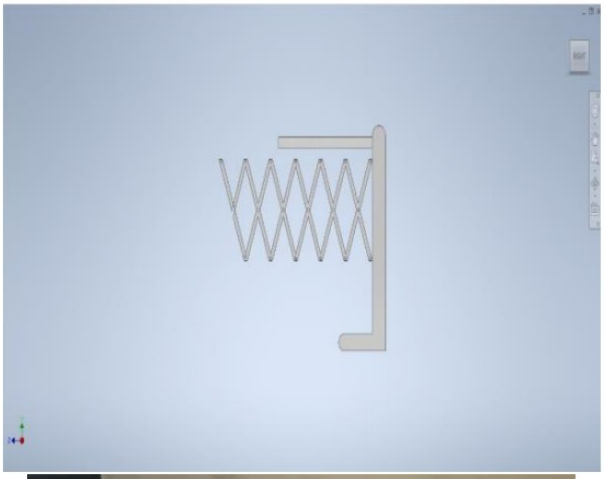


Figure 3.2.2.3

Front View

Figure 3.2.2.4

2) Orthography Drawing.

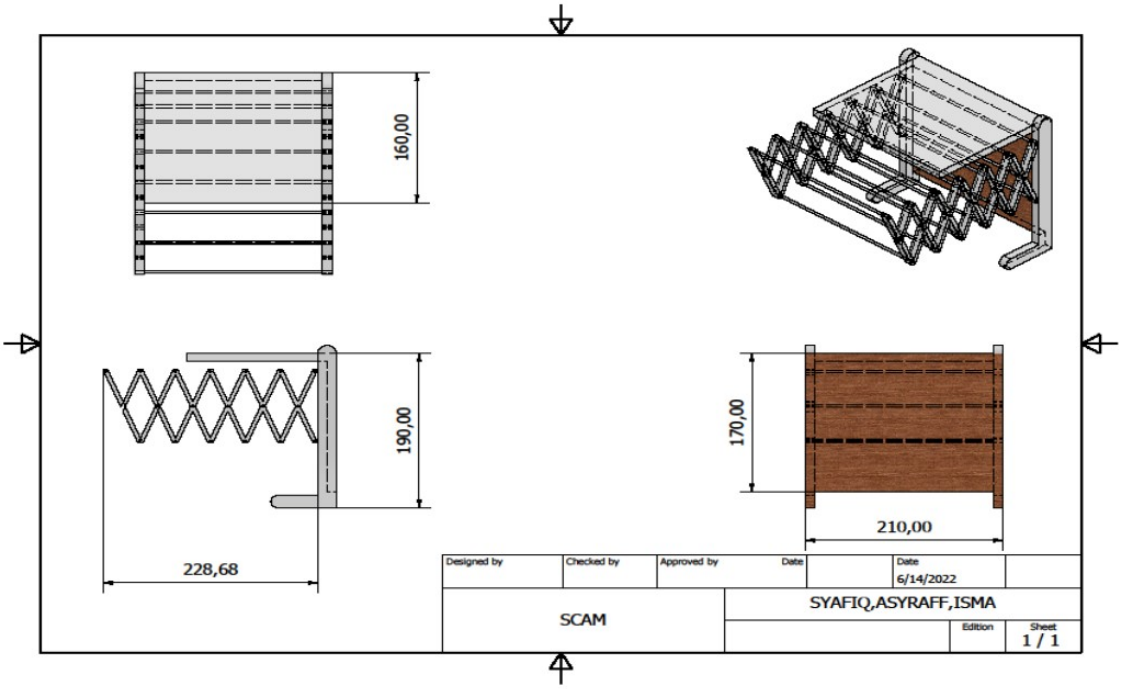
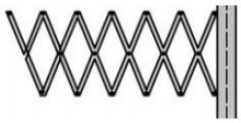


Figure 3.2.2.5

FUNCTIONS

SECTION	FUNCTION
	This section was used to hung clothing after they had been washed. Made of stainless steel to prevent rust. It had the ability to moved forward and backward. This clothes rack could held up to 20 clothes every day and 60kg capacity.
	This was a fiber roof. This element protects the clothes hanging rack from rain by acting as a roof. This was because, if the rain sensor detects rainwater, the clothes hanging rack would moved to the backed, bringing all the clothing beneath the roof.
	This plain wood component serves as a support for the legs of this hanger rack. This made the hanger's legs stronger and less likely have been torn off.

Material Costs

NO.	MATERIALS	QUANTITY	PRICES (RM)
1	ELANTAS Wall Mounted 5 Bar Extendable Space saving Clothes Laundry. • Size is 100cm. • It has 5 hanging bar.	1	RM 39.90
2	Rain Sensor Raindrop Module for Arduino. • Size 3.2cm x 1.4cm	1	RM3.80
3	ARDUINO UNO REV3 R3 Compatible ATMEGA 328 16U2 CH340 USB. • Length of cable is 30cm and have board.	1	RM39.90
4	SAF ELABANA Transparent Natural Light Fibre Roof. • Size is 33cm x 42cm. • Weight is 09.kg.	1	RM55.00
5	Plywood 9mm thickness Board Sheet Grade A. • Size is 2FT x 4FT.	1	RM22.05
6	Light Sensor Module (Light Dependent Resistor-LDR)	1	RM2.50
7	Proton Wira Power Window Door Regulator(AUTO)	1	RM27.00
8	Xugel Rechargable 12v Battery Sealed Lead Acid Battery 8Ah Capacity for UPS Alarm	1	RM35.60
	TOTAL		**RM225.75**

3.2.3 DATA ANALYSIS METHODS.

Every project that was undertaken must had advantages and disadvantages. After completing testing on smart clothes AI machines (scam), there were several benefits to IOT technology. As a result, this project looked have been highly modern and sophisticated. It had the advantage of having a rain sensor that detects the presence of rain. This prevents the shirt from being wet in the rain. Furthermore, having a motioned sensor that could regulate the forward and backward movement of the suspension at the same time could save energy since users did not had to stressed about picking up clothing when it rains. A roof was also provided to safeguard the clothes on the clothes rack. The clothes rack was then built of stainless steel, which did not rust quickly and therefore saves consumers money on having to bought more clothes racks. The disadvantage of smart clothes AI machines was that they could not hung clothes in big quantities and could not hung more than 20 pieces of clothing each day. This clothing hanger had 60kg rack capacity. If it reaches the maximum limit, this clothing hanging rack was highly likely to fell. However, this issue was solvable. When the clothing rack fell, it was simple to replaced.

3.3 SUMMARY.

A lot of information regarding this smart clothes AI machines may been acquired after further in-depth analysis and knowledge of the methodology of this studied. This information may been used as a reference for the intended design idea, costed estimations, and project dimensions. This information was crucial and had been used as a guide to helped with the process of creating this design and thereby developing the prototype for this studied.

CHAPTER 4

RESEARCH INITIAL FINDINGS

4.1 INTRODUCTION
(NUR ISMA LIYANA BINTI NORLISMAN)

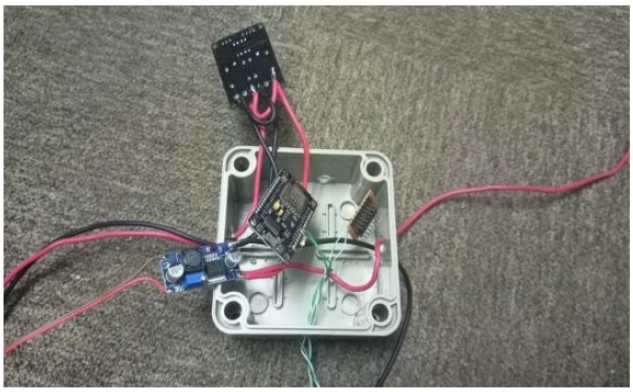
In this stage, it was possible to test project concepts that had had a positive impact on users. Furthermore, we could saw in the last chapter that the information picked was for the right goal. The corrected sensor standard or connection had a positive impact or effect on our endeavour's success. We were also capable of making sophisticated constructions used our own sweated points in this way. Indeed, we proposed that each of you been capable of creating a modern-day innovation.

4.2 FINDING RESEARCH
(MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN)

We discovered that this suspension project had a beneficial influence on the public or customers who have long suffered from this apparel problem because of talks between supervisors and members of our team. Overall, if our project is used more frequently, we will be able to attain our aims.However,there still a lot of weakness in our project.

These are some of the things that we test:

1. **Moving sensor not working well**



We have bought the complete item to activated the moving sensor. The LED does not light up because of wrong coding used in arduino.

2.**Stainless Steel Clothe Rack can't hold a lot of clothe**

As you can see this stainless steel clothe rack can't hold too much load and it became unstable especially went the clothe wet. Furthermore, it's hard to move forward and backward smoothly.

There are some of recommendation that we found to avoid from this problem.

4.3 RECOMMENDATION

(MUHAMMAD SYAFIQ IKMAL BIN M. AMRRAN)

Use a right Arduino coding in order to make the equipment work properly and functionable. Make a lot of research in YouTube to get the latest coding. For the clothe rack, reduce the amount of clothe that hang on the rack to avoid from being unstable and damaged. In addition, we are trying to use a powerful iron that can increase the suspension's smooth and make the clothe rack easily to move.

4.4 SUMMARY OF CHAPTER

(MUHAMAD ASYRAFF HAIQAL BIN MOHD RAMLI)

To preserve the harmony of existence, each project must be adapted to the difficulties that frequently arise out there at the conclusion of this chapter. Furthermore, this SMART CLOTHE AI MACHINE initiative will assist individuals in effectively managing their time. One of the benefits of our invention is the ability to keep garments from becoming wet when users or the public are out of the area.

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11. Teo Wei Hui,2014, University Malaysia Pahang
12. S.P. Sharma,2015

APPENDIX

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

GANTT CHART

SESION : 1:2022/2023
DEPARTMENT : MECHANICAL ENGINEERING
CODE/COURSE : DJJ50193 PROJECT 2

	WEEK/ PROJECT ACTIVITY	STATUS	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15
1	Project briefing, iSOLMS briefing	P	■														
		A															
2	design thinking / Arduino workshop	P				■											
		A															
3	Technical writing workshop	P					■										
		A															
4	Project Planning	P	■	■													
	project requirement		■	■													
	project plan		■	■													
	project scope and limitation		■	■													
	project methodology		■	■													
		A															
5	Project Development	P		■	■	■											
	project development details			■	■	■											
	project techniques and tools			■	■	■											
		A															
6	validity and reliability measurement	P					■										
	project results and analysis						■										
		A															
7	Project report writing	P					■	■	■	■	■	■	■	■	■	■	
		A															
8	Technical Paper review by supervisor	P												■			
		A															
9	Project Inventory Form submission	P													■		
	Poster review by supervisor														■		
		A															
10	PITEC JKM (Project Exhibition and Presentation)	P														■	
	Logbook and report submission															■	
		A															
11	PITEC 3 PSA (Project Exhibition and Presentation)	P															■
		A															

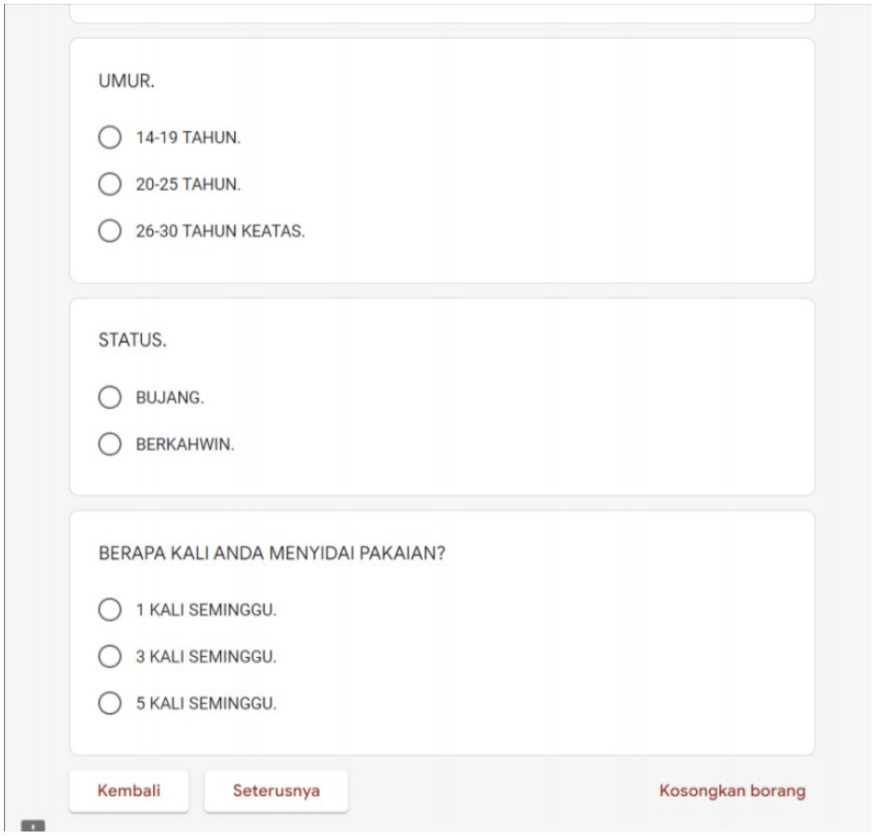
■ Planning
■ Actual

PROJECT COST ESTIMATES

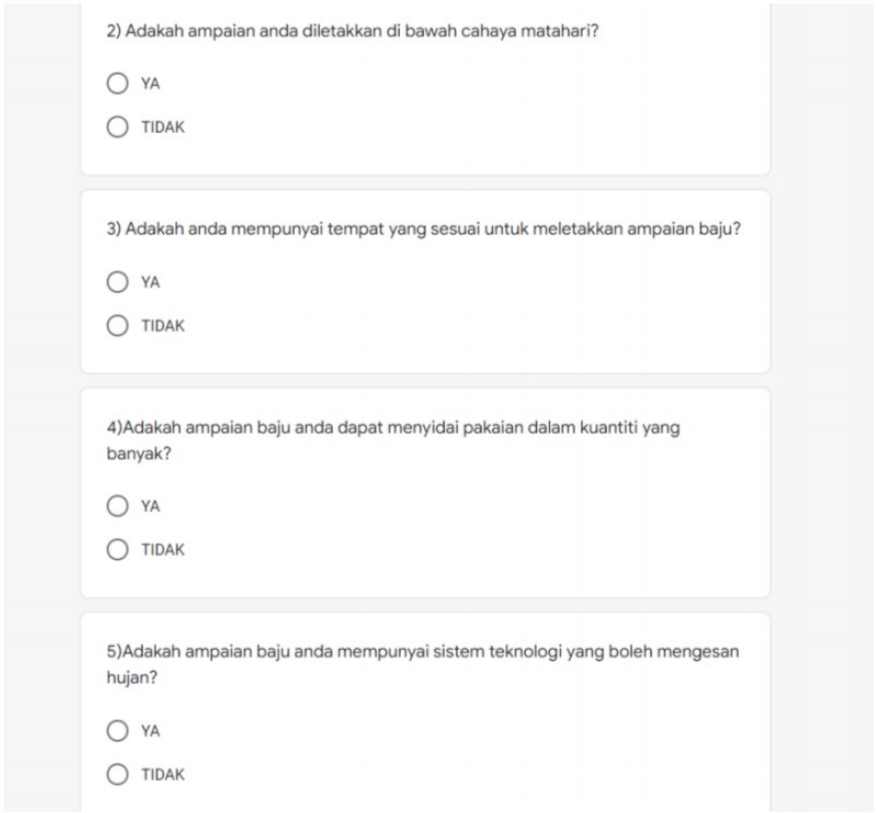
NO	NAME	COST (RM)
1	Material -ELANTAS Wall Mounted 5 Bar Extendable Space saving Clothes Laundry. • Size is 100cm. • It has 5 hanging bar. -Rain Sensor Raindrop Module for Arduino. • Size 3.2cm x 1.4cm -Node MCU ESP8266 -Plain wood 9mm thickness Board Sheet Grade A. • Size is 2FT x 4FT. -LDR Sensor Module -Power Window Control -Lead Battery Equipment - soldering tools -soldering iron placeholder -cutter -welding machine	RM225.75
2	Workers' wages (3 People)	
	Delivery Item	30.00
3		15.00
4		
		TOTAL: RM270.75

QUESTIONARE

Solution




POLITEKNIK
MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH
Maklumat Kepada Responder.
englishdkm3a@gmail.com (tidak dikongsi) Tukar akaun
BHG.2:PERNYATAAN
ARAHAN: Sila pilih jawapan mengikut skala penilaian yang dinyatakan.
1) Adakah anda mengalami kesukaran untuk mengakat pakaian apabila berlaku hujan?
YA
TIDAK


2) Adakah ampaian anda diletakkan di bawah cahaya matahari?
YA
TIDAK
3) Adakah anda mempunyai tempat yang sesuai untuk meletakkan ampaian baju?
YA
TIDAK
4)Adakah ampaian baju anda dapat menyidai pakaian dalam kuantiti yang banyak?
YA
TIDAK
5)Adakah ampaian baju anda mempunyai sistem teknologi yang boleh mengesan hujan?
YA
TIDAK

RESPONDER


BHG.1:LATAR BELAKANG PENGGUNA
JANTINA.
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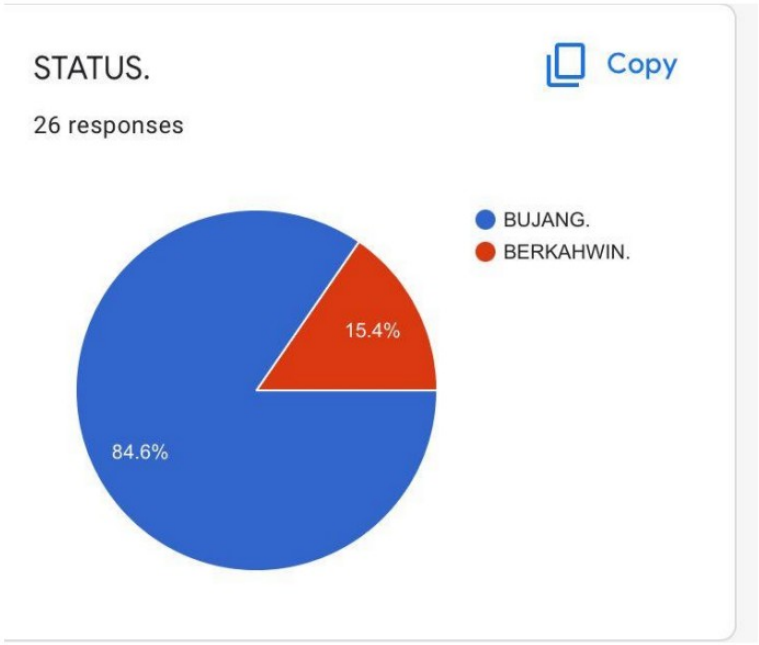
26 responses
LELAKI.
PEREMPUAN.
42.3%
57.7%


STATUS.
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26 responses
BUJANG.
BERKAHWIN.
15.4%
84.6%

UMUR.

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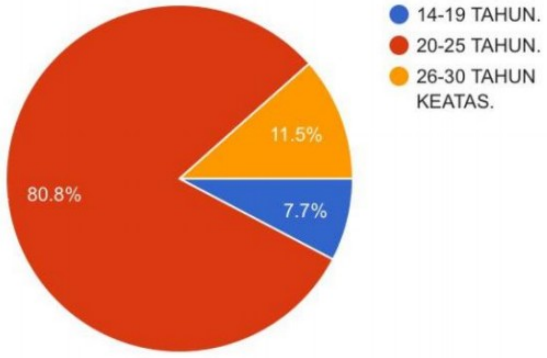
26 responses



BERAPA KALI ANDA MENYIDAI PAKAIAN?

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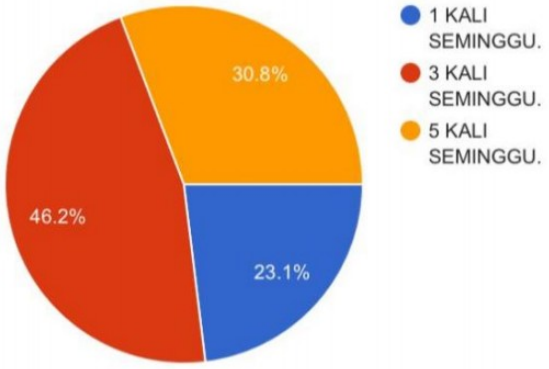
26 responses



1) Adakah anda mengalami kesukaran untuk mengakat pakaian apabila berlaku hujan?

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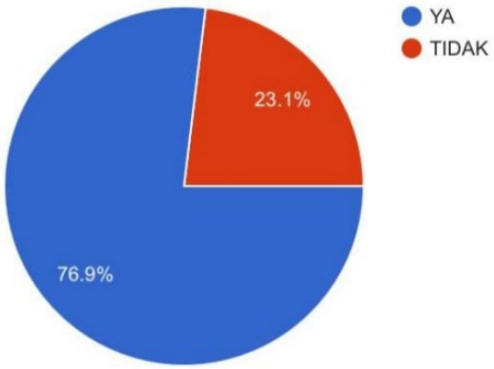
26 responses



2) Adakah ampaian anda diletakkan di bawah cahaya matahari?

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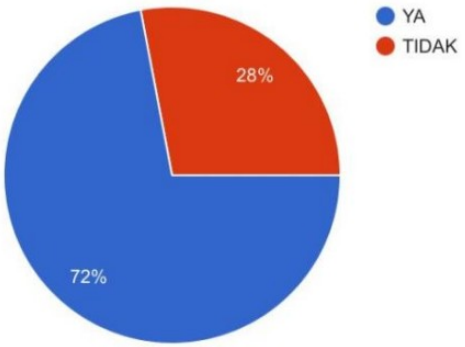
25 responses



3) Adakah anda mempunyai tempat yang sesuai untuk meletakkan ampaian baju?

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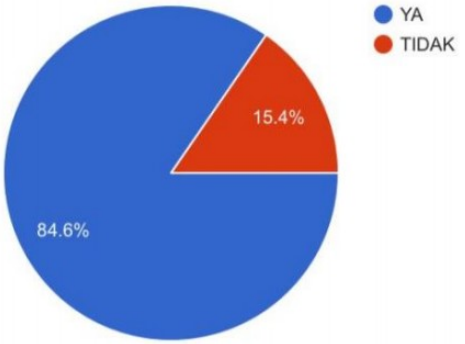
26 responses



4)Adakah ampaian baju anda dapat menyidai pakaian dalam kuantiti yang banyak?

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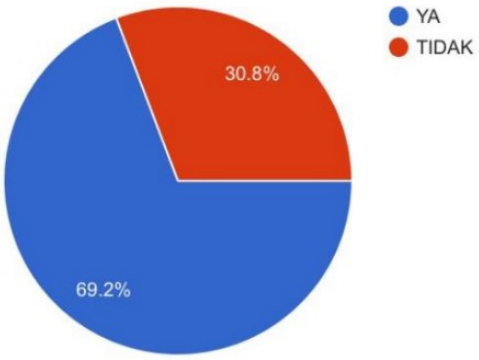
26 responses



5)Adakah ampaian baju anda mempunyai sistem teknologi yang boleh mengesan hujan?

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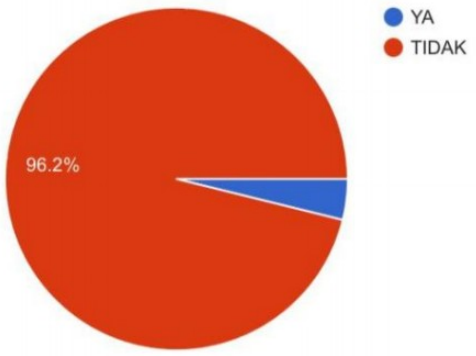
26 responses



FLOW CHART


START
Registration for a Project 2.
Participating in Briefing Project
Implementation of Project 2
Supervisor Review of Project Results and Monitoring of Activities Project 2.
NO
ACCEPTED?
YES
Presentation of Project 2 Results
Correction & Review of Project
Submission of Final Report to
Evaluation and Argument by
END