POLITEKNIK MALAYSIA

SULTAN SALAHUDDIN ABDUL AZIZ SHAH

REPORT PROJECT

SUBJEK: PROJEK 2 / DJJ 50193

STUDENT INFORMATION

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FYP TITLE	OHA PORTABLE FAN

JABATAN KEJURUTERAAN MEKANIKAL

SESI 1 2021/2022

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

OHA PORTABLE FAN

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Laporan ini dikemukakan kepada Jabatan Kejuruteraan Mekanikal sebagai memenuhi sebahagian syarat penganugerahan Diploma Kejuruteraan Mekanikal (Pembungkusan)

JABATAN KEJURUTERAAN MEKANIKAL

SESI 1 2021/2022

AKUAN KEASLIAN DAN HAK MILIK

TAJUK : OHA PORTABLE FAN

SESI : 1 2021/2022

1. Kami, **1.MOHAMMED AIMAN BIN ASRAF (08DMP19F1117)**

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Adalah pelajar tahun akhir **Diploma Kejuruteraan Mekanikal (PEMBUNGKUSAN), Jabatan Kejuruteraan Mekanikal, Politeknik Sultan Salahuddin Abdul Aziz Shah**, yang beralamat di Persiaran Usahawan, 40150, Shah Alam, Selangor.

2. Kami mengakui bahawa "Projek tersebut di atas" dan harta intelek yang ada di dalamnya adalah hasil karya/reka cipta asli kami tanpa mengambil atau meniru mana-mana harga intelek daripada pihak-pihak lain.

3. Kami bersetuju melepaskan pemilikan harta intelek 'projek tersebut' kepada 'Politeknik tersebut' bagi memenuhi keperluan untuk peanugerahan **Diploma Kejuruteraan Mekanikal (Pembungkusan)** kepada kami.

Diperbuat dan dengan sebenar-benarnya diakui

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ABSTRACT

Project 2 is a final year project (FYP) for all Diploma students. Where each group needs to have three group members to implement this final project. The project that our group is doing is a Portable Fan. The summary of our project objectives is to facilitate and provide comfort to the community in Malaysia today. There are various problems faced by the Malaysian society today, among the things that our group focuses on is in terms of the rate of warming in this country. In fact, not only that, the Malaysian community also wants the comfort and convenience of something that can be taken everywhere. It is so that all the problems expressed by the Malaysian community have found a solution with the use of Portable Fans produced by our group. With a fan speed that can provide coolness to users, it is also equipped with various other functions found in our group's Portable Fan such as power bank, sound sensor and LED lights. In fact, not only that, our Portable Fan also has a small size that is easy to store and carry anywhere. Apart from that, the purpose of the implementation of this Portable Fan project is also more focused on people who do camping activities. Therefore, with this Portable Fan, then the community who carry out camping activities will be easy because they only need to bring one thing that has various functions that is the Portable Fan produced by us. The summary of the conclusion that can be deduced from this Portable Fan is that it can provide many benefits to users because it has various functions and facilities. Therefore, this Portable Fan is suitable for use by various ages, both adults and children because it does not pose any danger.

ABSTRAK

Projek 2 adalah projek tahun akhir (FYP) untuk semua pelajar Diploma. Dimana setiap kumpulan perlulah mempunyai tiga orang ahli kumpulan untuk melaksanakan projek akhir ini. Projek yang kumpulan kami lakukan adalah “kipas mudah alih”. Ringkasan objektif projek kami ialah untuk memudahkan dan memberi keselesaan kepada masyarakat di Malaysia pada masa kini. Terdapat pelbagai masalah yang dihadapi oleh masyarakat Malaysia pada masa kini, antara perkara yang dititikberatkan oleh kumpulan kami ialah dari segi kadar kepanasan di negara ini. Malah bukan itu sahaja, masyarakat Malaysia juga menginginkan keselesaan dan kesenangan sesuatu benda yang boleh dibawa ke merata tempat. Hal ini demikian bahawa semua masalah yang dinyatakan oleh masyarakat Malaysia telah menemui penyelesaiannya iaitu dengan penggunaan “kipas mudah alih” yang dihasilkan oleh kumpulan kami. Dengan kelajuan kipas yang dapat memberi kesejukan kepada pengguna, ianya juga dilengkapi dengan pelbagai fungsi lain yang terdapat dalam “kipas mudah alih” kumpulan kami seperti powerbank, sound sensor dan juga lampu LED. Malah bukan itu sahaja,” kipas mudah alih” kami ini juga mempunyai saiz yang kecil yang mudah disimpan dan dibawa kemana-mana sahaja. Selain itu tujuan pelaksanaan projek “kipas mudah alih” ini juga adalah lebih tertumpu kepada orang yang melakukan aktiviti perkhemahan. Oleh itu dengan adanya “kipas mudah alih” ini, maka masyarakat yang menjalankan aktiviti perkhemahan akan menjadi mudah kerana mereka hanya perlu membawa satu benda sahaja yang mempunyai pelbagai fungsi iaitu “kipas mudah alih” yang dihasilkan oleh kami. Ringkasan kesimpulan yang dapat dirungkaikan dari “kipas mudah alih” ini ialah ianya dapat memberikan banyak manfaat kepada para pengguna kerana ianya mempunyai pelbagai fungsi dan kemudahan. Oleh yang demikian, “kipas mudah alih” ini sesuai digunakan oleh pelbagai peringkat umur baik dewasa mahupun kanak-kanak kerana ianya tidak mendatangkan sebarang bahaya.

CONTENTS

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In this era of progress, society prefers to use goods that are more convenient and reduce the burden to carry. Due to the relatively hot weather in Malaysia, most people in Malaysia have a portable hand fan that is easy to carry and use when the weather is very hot. In addition, they also have a power bank that is brought to charge mobile phones. Because of that the community has to carry these two items at a time. Therefore, with the production of this OHO Mobile Fan aims to reduce the burden and be able to please the community.

This OHO Portable Fan is able to cool the community when it is hot and can charge the phone at the same time because it has a charging port, fan and small lights that can be used simultaneously. In addition, we have also added a sensor that can make it easier for users to use it. The device is produced with a modern and more efficient form. It is also easy to use as it uses battery power and can be used anywhere. With a versatile shape and easy to carry, it is very suitable for use by people who are in outdoor areas or hot areas. In the meantime, according to the passage of time, many tools have been produced to facilitate the community. This idea was generated through monitoring the problems faced by the community at this time.

1.2 PROJECT BACKGROUND

The OHA Portable Fan is a fan that has a device for charging the phone and has a small light fan and a sensor. This device is able to charge the phone when there is no plug to charge around us. It is able to charge the phone well and has a battery capacity of 5000mAh that can charge in an emergency. This device is produced by using a fan, charger port, bulb, a sensor, a circuit and a few wires. This device uses battery power and can also be charged.

1.3 STATEMENT OF PROBLEM

In this era of progress, most portable fans have only one function which is to cool us. In addition, the community has to carry the 'power bank' and the fan separately and it is very inconvenient. In addition, the existing fan is difficult to store and carry because it has a relatively large size and is quite heavy to carry. Therefore, this OHA Mobile Fan is produced to facilitate the community in their daily lives.

1.4 OBJECTIVES OF THE STUDY

The objective of this study was to design a portable fan system. The following is a list of some of the objectives involved:

i) Identify the quality of effectiveness of this tool to the user.

ii) Design more modern and efficient tools.

iii) Design multi -purpose and easy -to -carry tools.

iv) Simplify the daily life of users.

1.5 PROJECT QUESTIONS

Among the research problems that are emphasized as the main problems of this project are

i) Is it true that the production of mobile fan projects that follow the passage of time and are efficient can reduce the problems of daily life of users

ii) Does the design feature of this tool make it easier to carry.

iii) How do you prove that this created tool has a guaranteed quality to the user

1.6 PROJECT SCOPE

The scope or limits of the implementation of this project should be done because it is intended to be used as a reference source to ensure that each implementation of this project does not run away from the objectives that have been set so that the goals of this project can be achieved. In short, this portable fan can charge the phone and use the fan at the same time. Moreover, it is also easy to store in a bag and can be used when necessary.

1.7 THE IMPORTANCE OF THE PROJECT

i) This project can be convenient for users to charge the phone during emergencies in areas that do not have a charger port.

ii) Lightweight and easy to carry.

iii) Suitable to be placed in a bag because it does not take up much space and is not too heavy to carry.

iv) Able to cool the body during hot weather.

1.8 DEFINITION OF TERMS

I) FAN

A fan is a device that has blades that can rotate quickly to produce wind so that the user is comfortable.

II) CHARGER HOLE

This charger hole is taken from the charge socket to be attached to the fan.

III) SMALL LIGHTS

These lights are attached using wires to attach to the fan.

IV) ULTRASONIC SENSOR (Sound)

The ultrasonic sensor is placed on the outside of the fan which makes it easier for the sensor to trap the sound generated by the user.

V) POWERBANK

Powerbank is a tool to help smartphone users charge their phones without the need to use a socket. Just connect the USB cable to the power bank, and it will start the task of charging your phone.

1.9 FORMULATION

This OHO Simple Fan is a device to cool consumers in a more efficient way. It is also produced based on observations from the problems often faced by consumers in Malaysia. In addition, it can also make it easier for users to cool down during hot weather. Apart from being easy to carry everywhere, it is also easy to use and not burdensome.

CHAPTER 2

LITERATURE RESEARCH

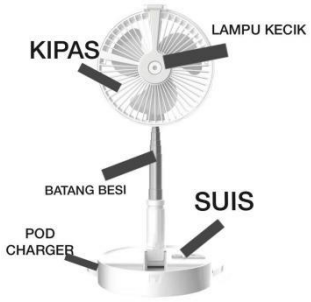
2.1 INTRODUCTION CHAPTER

Literature refers to reference research articles to understand and study research problems. Literature review is a method of obtaining reference sources and project information, which has been developed. Literature review is a study has been done based on the theories used in the study such as books, journals, internet sites and so on. Therefore, in this chapter there are several theories related to this study such as fan, pod charger, small lamp and power bank.

This OHA portable fan device is very important to be placed anywhere so that it can be used in hot weather. But other fans on the market are less suitable because they are too big to carry anywhere and they also work only to rotate. Compared to this OHA mobile fan that can also charge your mobile phone. To get good results, I have done a literature review on some of the existing mobile fans available in the market for me to improve my OHA mobile fan products.

The OHA portable fan is a modern product and can be used anywhere because it only uses battery power. It is also environmentally friendly because it does not use chemicals that can harm or pollute the environment. It is different from other portable fan products because it does not need to be charged for too long to use. Therefore, saving time and energy can be done in a time such as a power outage no matter in the morning or night.

2.2 REVIEWS AND INVESTIGATIONS



RAJAH 2.2.1 PROJEK KIPAS MUDAH ALIH YANG DILABEL

i) SMALL LIGHTS:

The small light on this OHA portable fan provides convenience at night or in the dark. Apart from that, the small lamp is convenient for anyone who likes to take pictures because it will create a bright light and beautify a person's picture.

ii) FAN:

The fan works to expel air to cool the user so that the user feels comfortable and cozy. In addition, this fan can also rotate 180 degrees.

iii) IRON STICK:

The iron rod on this OHA portable fan can control the fan height either low or high. This iron rod can also rotate 90 degrees from the base.

iv) POD CHARGER:

The charger pod on the OHA portable fan included with the powerbank is to provide convenience to the user.

v) SWITCH:

This switch is used to turn the arduino on and off.

vi) SOUND SENSOR:

This sound sensor microphone is located on the outside of the fan. It will facilitate the sensor to trap the sound generated by the user to turn on the fan.

2.3 PREVIOUS STUDIES (FANS):

About the Fan a fan is an indispensable thing for human beings during hot weather. It is used to cool the surrounding area by expelling hot air and blowing cold air. This will cause the ambient temperature to be cooler, thus providing comfort for humans. There are several types of fans that are often used by the community, such as table fans, sitting fans, standing fans, wall fans and coin fans.

2.3.1 TYPES OF FANS:

i) TABLE FAN:

Table fan measuring from fourteen in. So suitable to be placed on the table. This type of fan does not have a wind that is not too strong. Usually a table fan has a short neck of about 50cm with a fairly wide support leg at the bottom.

RAJAH 2.3.1.1: KIPAS ANGIN MEJA

ii) SITTING FAN:

Self -sitting fans have a type. This fan is divided into 2 types, namely the fan blade is wrapped with hard plastic material and the second type is the blade is wrapped with barbed wire. Box -packed fan physics models are usually equipped with a small lattice lattice capable of rotating 360 degrees or turning left and right on the front of the fan. The diameter spread of a sitting fan leaf usually ranges between fourteen to twenty in.

RAJAH 2.3.1.2: KIPAS ANGIN DUDUK

iii) STANDING FAN:

The standing fan is almost the same as the table fan The only difference between the table angina fan and the standing angina fan is that this fan has a 1-meter-long stem at its neck which makes it look taller than the table angina fan. The height of the neckline can usually be adjusted either high or low. In addition, the fan head can also rotate to the left and to the right 180 degrees so that the wind can reach a wide area.

RAJAH 2.3.1.3: KIPAS ANGIN BERDIRI

iv) WALL FAN:

Wall fan or also referred to as kitchen fan. This rectangular wall fan is usually placed permanently blended with the wall or on a coin above or near the cooking area. In general, this fan can remove and insert air into the house and out of the house. This fan is more suitable to be placed in the kitchen to prevent the accumulation of smoke when cooking food.

RAJAH 2.3.1.4: KIPAS ANGIN DINDING

v) COIN FAN:

This coin fan or in English is a ceiling fan. This type of fan is attached and hung on the house coin. This fan is not equipped with a box or fan barrier, the fan blades rotate without any protection because its position 15 is located at the top of the house coin, then we will be able to feel the wind flowing on our body. The wind cooling range it creates is also the strongest among other types of fans.

RAJAH 2.3.1.5: KIPAS ANGIN SYILING

CHAPTER 3

METHODOLOGY

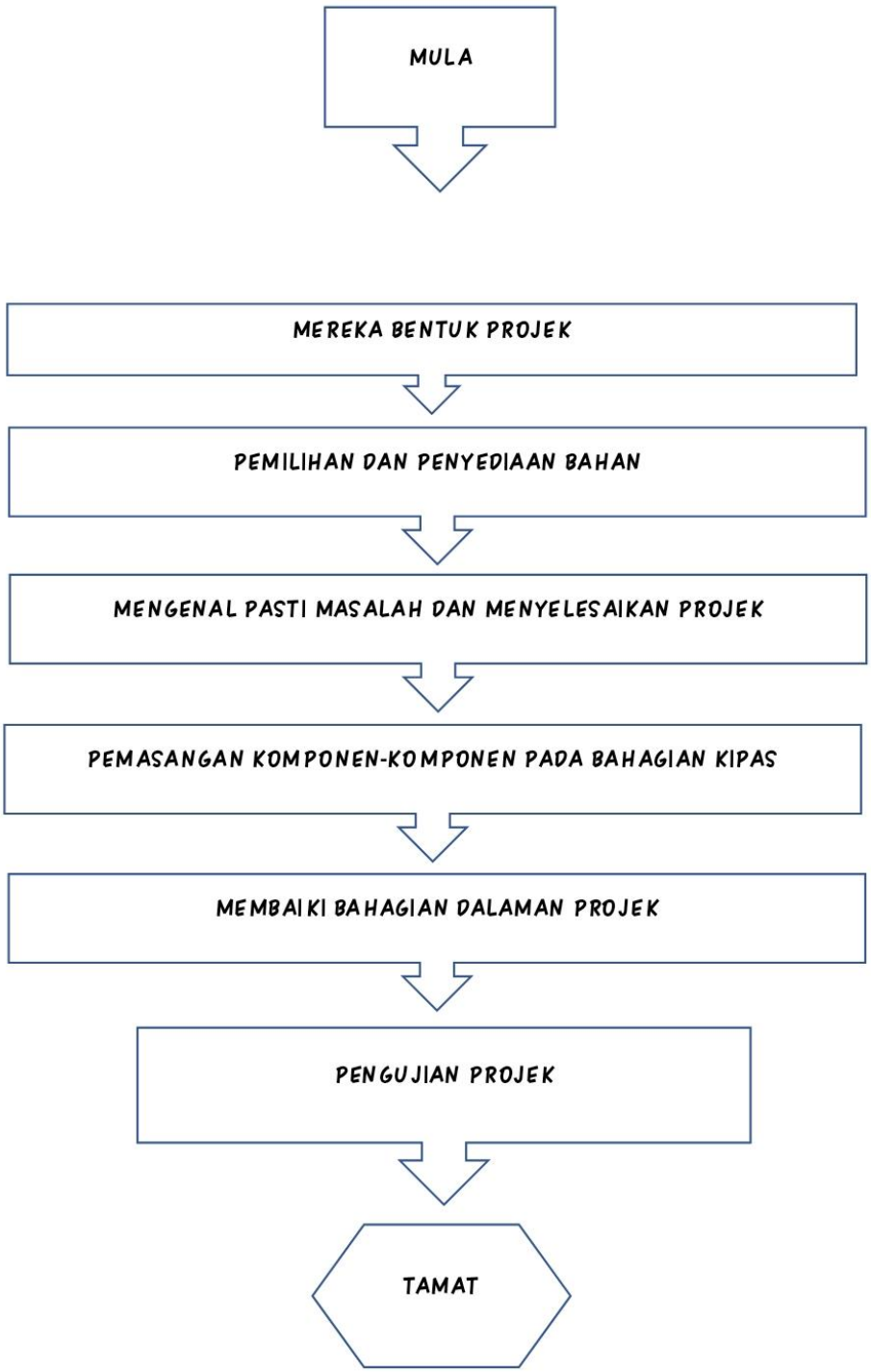
3.1 INTRODUCTION CHAPTER

Research methodology is the methods and techniques of designing, collecting and analyzing data in order to produce evidence that can support a study. Methodology serves to describe how a problem is studied and why a particular method and technique is used. The purpose of the methodology is to help understand more widely or in more detail about the application of the method by making a description of the research process.

A system that covers the methods and principles used in a given task or work is a definition of methodology, according to the Fourth Edition Language Board Dictionary. Methods, techniques, rhythms, paths and patterns are other meanings of methodology. Methodology also means knowledge of the methods and disciplines used when conducting a particular study to achieve a particular goal. Research methodology refers to the most appropriate method for conducting research and determining effective procedures for answering research problems.

In the process of producing this project, several aspects need to be understood in order to produce a high quality project and in accordance with market requirements. In the methodology, there are 4 specific sections.

3.2 FLOW CHART



3.1.1 Identifying problem

At the beginning of the project, the objectives and scope for the project were identified in discussions with the supervisor. Once the project was identified, a literature review was reviewed to determine the facts and information to support the study and explain the background of the project more clearly.

3.2 PROJECT DESIGN

The steps used to find product ideas are by using the method of "brainstorming" which aims to gather information in groups. Ideas collected through the method of "brainstorming" will be recorded and evaluated by the lecturer. The chosen idea has those characteristics.

3.2.2 Easy to operate

Before making or designing a new product, one of the important things to do is to determine the flow of project design steps. This has separated the four measures of mutual interest to create a product design flow. Such as defining specifications creating design concepts, decision -making, and detailed design. The ‘Portable Fan’ design has 3 main parts, namely lights that can be used at night, in addition to the power bank that can be used to charge mobile phones and a relatively large battery section that can charge the phone and sound sensor to turn on the lights and fan at once.

3.3 METHODS OF DATA COLLECTION

i) METHOD OF OBSERVATION

We have made observations in several areas close to where we live. The main locations we have run are in public areas.

ii) QUESTIONNAIRE METHOD

We have made a questionnaire using the method of "Google Form" to the community and our friends regarding "Portable Fan". The majority of them strongly agree with the "Portable Fan" which is able to provide freshness to the community, especially in hot weather.

iii) FIELD STUDY METHODS

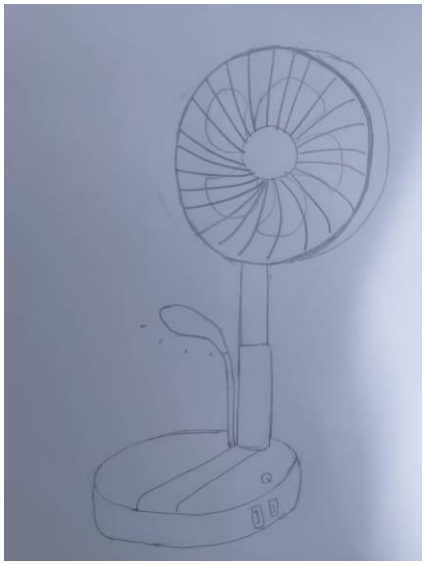
The study was conducted close to our residential area. Some of us have met and asked the surrounding community about the weather lately. Most of them stated that the weather was quite hot. Therefore, we have agreed to produce a project called "OHA Portable Fan". We hope that with this "Portable Fan" can solve the problems faced without having to waste money to install "Aircond" at home.

iv) RESEARCH INSTRUMENTS

Research instrument means any tool or means used to find and collect research data. In some studies, these instruments included forming a questionnaire, a list of interview questions or a checklist. In other studies, this instrument may refer to the equipment used to obtain and collect study data.

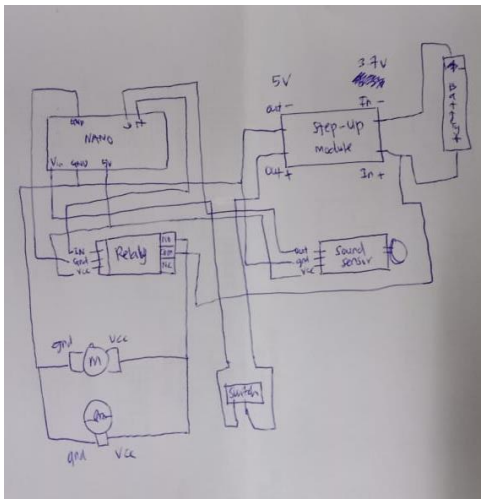
v)RESEARCH DESIGN

FIRST DESIGN



DESIGN OPTIONS

vi) Schematic circuit diagram



vii) *"GOOGLE FORM"*

'Google Forms' is survey administration software included in the 'Google Docs' software network with 'Google Docs', 'Google Sheets', and 'Google Slides'. This allows the collection of information from users through surveys. The information collected can be automatically entered into a 'spreadsheet'.

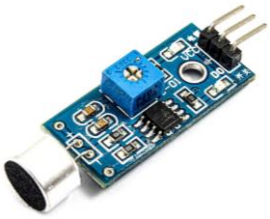
PROJECT MANUFACTURING EQUIPMENT

MATERIALS	USES
 **Hot Glue Gun**	Used to attach lights, sockets and batteries to the fan section.
 **Alat Pematrian**	Used to connect the wires in the circuit.
 **Pita Pengukur**	Used to measure the height of the fan after the fan is placed on it.

Jadual 3.1 Peralatan Projek

PROJECT EQUIPMENT

MATERIALS	FUNCTION
 **FAN**	Used as the main tool of the project
 **LAMP**	Placed around the fan and its wires are connected to the battery section to ignite it
 **POWERBANK**	Placed on the inside of the fan used as an energy source.
 **BATTERY**	Rechargeable battery is used as the main energy "OHA PORTABLE FAN" it has a power of 13 v and can be recharged when the battery runs out.

 **ARDUINO NANO**	The Arduino Nano is a small, complete, and breadboard-friendly board based on the ATmega328 (Arduino Nano 3.x). It has more or less the same functionality of the Arduino Duemilanove, but in a different package. It lacks only a DC power jack, and works with a Mini-B USB cable instead of a standard one.
 **SWITCH ARDUINO**	The arduino switch serves to turn the arduino circuit on and off
 **SOUND SENSOR**	The sound sensor functions as a module that detects sound waves through their intensity and converts them into electrical signals.
 **RELAY 5v**	Disconnect and connect the electrical current in the circuit as an electrical switch. Perform the logic function of the arduino microcontroller
 **STEP UP MODULE**	Provide some method of voltage division to meet equipment needs. Change ac voltage to pulsating dc voltage by either half-wave or full-wave rectification. Filter pulsating dc voltage to a pure dc steady voltage for equipment use.

3.5 SAMPLING TECHNIQUES

Sampling refers to selecting a group of people, institutions, locations, or any group that the researcher wants to study. Sampling is the process by which a researcher selects a group of people or a location for research that is representative of a large group.

The main purpose of sampling is to obtain information on the population of a particular community in a place. The purpose of sampling is to obtain a sample that describes the population of variables that are of concern to the researcher. This means the researcher takes a small portion of the population for observational purposes and summarizes the population represented by the sample.

Therefore, a good sample selection is a sample that can be representative of the variables in the target population. Sampling is the process of selecting elements in a research group to represent a group of researchers. According to Mohd. Majid Konting (1998), the selected sample should have attributes similar to the population found in the study to be studied. 30 respondents is the minimum allowable sample size. A good and smooth sampling process can test the next research hypothesis can help make generalizations.

In general, sampling techniques are divided into two, namely, random and non -random. Here is a brief description to make it easy to understand:

3.5.1 RANDOM SAMPLING

Random or probability sampling is a technique for selecting a sample from a population, in which each individual in the population has the same probability of being selected or sampled for research.

Easy Random Technique

This simple random technique is done by choosing at random such as a lottery or using computer -generated random numbers.

To select a random sampling method, there are several steps required:

First, the sample of the study should be determined through research.

A comprehensive list of members should be prepared by the researcher. The list will be the research population to be randomly selected.

The probabilities and chances of each member should be selected by the researcher to be the study sample.

Systematic Random Techniques

Use the system formula by selecting everyone at intervals until the required number of samples is reached.

Researchers must have a complete list of members. The selection of members will be done systematically, such as selecting individuals in an odd -numbered member registration list or by determining the position of individuals.

For example, if the study population is 2000 students, then the sample is 100 people, which can be expressed by the following formula: (2000 ÷ 100 x 20).

Every 20 to 100 student samples will be selected.

Stratified Sampling Technique

If the subgroup division is unbalanced, such as the number of males and females, use this stratified randomization technique.

If the person being interviewed is to be studied uniformly, use this technique. Samples from each group and layer that have been determined will be randomly selected.

An example is the selection of a sample for a residential college that accommodates students from different years of study.

The condition is that if the researcher determines the number of students in each class as a sample, then the year of study and random sampling will be easier to carry out.

Group Random Techniques

The sample selection technique for the cluster random technique differs because the individual samples are not directly involved. This is because the researcher uses the division of the area or institution where the sample is located first.

Sample selection based on groups.

Demographic characteristics constructed by researchers by category are the definitions of clusters. Urban or rural, executive or non -executive and occupants of flats or condominiums are examples of demographic characteristics.

3.5.2 NON -RANDOM SAMPLING

Non -random sampling is a technique of selecting a sample from a population in which each individual in the population does not have the same opportunity or probability in the selection process as the sample.

Convenience Sampling Techniques

This appropriate technique is based on the researcher's comfort in selecting suitable and readily available, voluntary and cooperative individuals. Appropriate and convenient samples are samples that may already be available with the researcher.

To select study respondents, sampling is one of the easiest methods because this method or technique does not require high cost.

This method is often used when researchers need to get accurate study results in a short time.

This sampling method does not have any procedure. This means that anyone found by the researcher can be used as a study sample.

For example, a study on visitors' perceptions of IPT career fairs. Anyone coming out of the ongoing exhibition can be interviewed.

Purposive Techniques

The selection of the purposeful technique sample is the selection based on the criteria set by the researcher to obtain a suitable study sample. These researchers already have goals and targets for their sample.

Therefore, convenience sampling can also be purposive sampling if the sampling criteria set by the researcher are also existing samples with the researcher.

Snowball technique

The snowball technique was performed for studies that required respondents to identify other suitable respondents.

Snowball sampling is initiated by selecting samples that have predefined characteristics.

The initial sample will introduce other samples with similar characteristics.

This process will be continued with the third, fourth, fifth and so on samples.

For example, the user of the XYZ product will introduce the user of the same product that he knows. The study sample will be selected to meet the sample size required by the study.

Quota Techniques

This quota technique has similarities with cluster and stratified random sampling techniques. All three of these techniques involve the division of a population into sub-populations according to specific categories or classes. For the quota technique, classification is done while the respondents are studied and this process continues until the number of samples is reached according to the desired quota. Is a layered sampling but is not determined through the principle of probability.

The researcher divided the population into several categories through the interview method.

This category is further divided into urban or rural areas and then detailed to men or women and refined to the Malays, Chinese and Indians.

3.6.1 METHOD OF PRODUCT PRODUCTION

i. PROJECT SELECTION

In the project selection process, certain criteria and factors need to be emphasized. Among them are in terms of material selection, cost, and safety. The materials used must be appropriate to the product to be produced.

ii. PROJECT PLANNING

The process of forming a suitable framework and manufacturing techniques also requires meticulousness and careful planning because the structure to be made is in accordance with the product. among them are, studying the appropriate equipment and materials, the selection of materials that are economical, and quality and user -friendly. To plan the process of making a project, it requires careful planning in order to meet what is required by the question and at the same time can save costs in order to avoid any mistakes in terms of purchasing equipment and so on.

3.2 Finding Project Materials

Each member of the group finds the materials needed to produce the project in hardware stores and items that can be found at home such as hot glue guns and measuring tape.

3. 3 Measuring Height

A measuring tape is used to measure the height of the fan in order to identify the appropriate position for placing components such as lights.

3.4 Component Composition

Each member of the group gives an idea for arranging the appropriate components so that they look beautiful and attractive.

3.5 The process of placing components

The components are attached to the circuit and soldered.

3.5.1 Soldering Process

The wires between the fan, powerbank, lights, switch sockets and sensors are arranged and soldered so that the electrical flow runs smoothly and looks neat.

3.5.2 Pasting Process

The components attached to the fan are lights, powerbank, switches and sensors.

3.6 METHODS OF DATA ANALYSIS

Data analysis method is the stage of the research process where the data that has been collected can be processed to answer the problem. Data management and processing is data analysis. Data analysis is a method to control and present data as well as statistical procedures. The purpose of analysis is to provide data in a more efficient form.

The data and information obtained will be analyzed and processed to obtain conclusions and solutions to problems of the study conducted. This data and information will also be analyzed to obtain the relationship between the data and also a comparison between the data obtained.

The data obtained will be analyzed and then the results of the data will be described in the form of tables, bar charts and pie charts to facilitate the reader's understanding to draw conclusions and conclusions from the study.

Data analysis is arranging, selecting, combining and sorting from a questionnaire. Data analysis of "OHA Portable Fan" is made in the form of tables and calculations for the project. This is done so that the data project data is viewed systematically and easily understood.

3.7 COST OF MATERIALS

Material cost estimates are intended as a financial guide for the project so that we do not exceed our financial means. All aspects need to be taken into account in the cost estimate so that nothing is overlooked and causes a lack of cost. Material material must be measured accurately to avoid wastage or shortage of material.

BAHAN	KOS
KIPAS	RM10
LAMPU	RM6
SOKET	RM1
SUIZ	RM1
“POWERBANK”	RM18
ALAT PEMATRIAN	RM1
PETA PENGUKUR	RM1
“HOT GLUE GUN”	RM1
SENSOR ULTRASONIC	RM4
JUMLAH HARGA	RM43

Jadual 3.4 Kos Bahan

3.8 SUMMARY OF CHAPTER

At the initial stage, the study design, data collection methods, study instruments, sampling techniques and data analysis methods were made systematically to know the facts and information to support the study and imagine it clearly in this research.

After the data are analyzed, it is important to draw conclusions and conclusions for results and hypotheses whether OHA portable fan are effective or not. So from that, we can move on to the next step to produce the product. This topic is to make users aware of the importance of our products and how well the improvements we make to overcome the shortcomings of other mobile fan products/gadgets.

CHAPTER 4

PRELIMINARY FINDINGS AND ANALYSIS

4.1: INTRODUCTION

Research is creative and systematic work carried out to improve knowledge, including knowledge of people, cultures and societies, and the application of knowledge to design new applications. It is used to establish or confirm facts, confirm previous work, solve new or existing problems. The results of the study we received from the survey we conducted. Various responses that we can and will use in our research. In addition, the results of our investigation are augmented by our analysis of the respondent data provided about our products.

4.2: FINDINGS / DATA / PRELIMINARY INVESTIGATION OF THE STUDY

4.2.1: EVALUATION

All projects must be completed and fully tested before the evaluation is made. The evaluation criteria and evaluation of the PTA include the following:

a. Project report

b. Project proposal paper

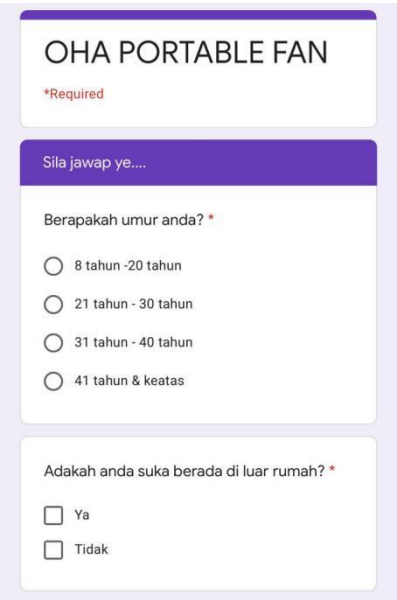
c. Project functionality and operability

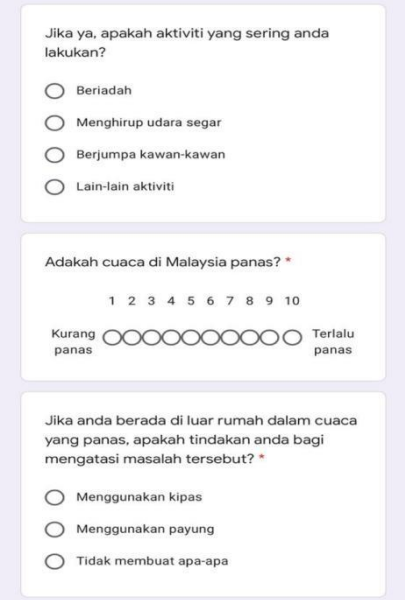
d. Project presentation

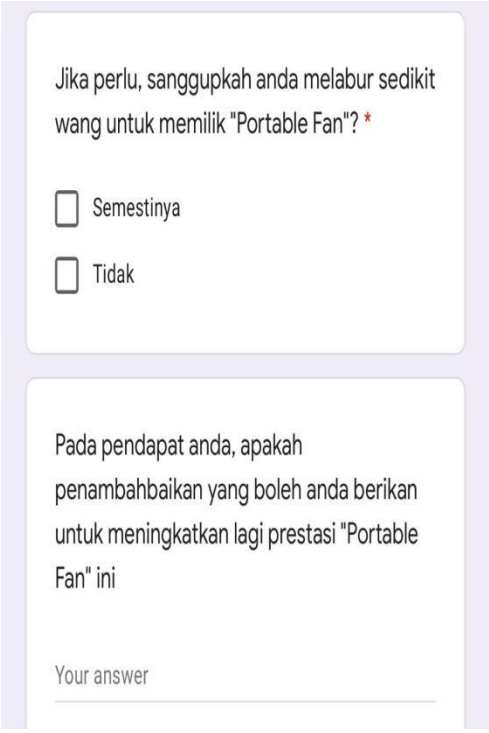
e. Overall commitment

4.2.2: ANALYSIS

The process of data analysis of the study is shown through the production of pie charts. This group of analysis on OHA mobile fans is shown based on the public selection between mobile fans in the market or OHA mobile fans.







Question 1:

PERKARA	JUMLAH %
8y - 20y	65.3%
21y - 30y	22.8%
31y - 40y	6.9%
41y&above	5%

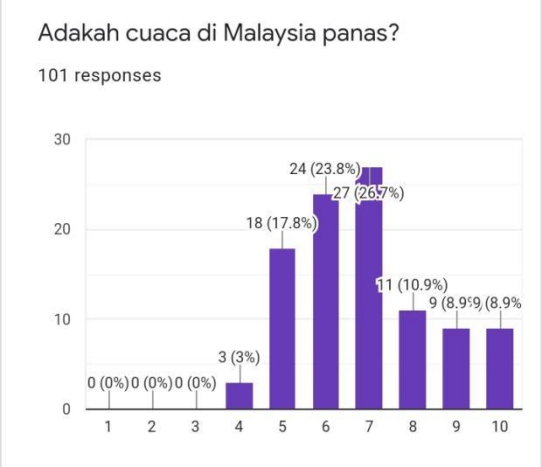
Question 2:

PERKARA	JUMLAH
YA	90
TIDAK	12

Question 3:

PERKARA	JUMLAH
BERIADAH	18
MENGHIRUP UDARA SEGAR	12
BERJUMPA KAWAN	41
LAIN-LAIN AKTIVITI	26

Question 4:

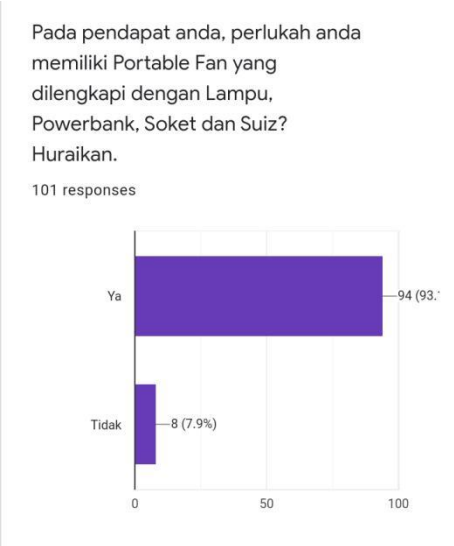


KEKERAPAN	1	2	3	4	5	6	7	8	9	10
JUMLAH	0	0	0	3	18	24	27	11	9	8

Question 5:

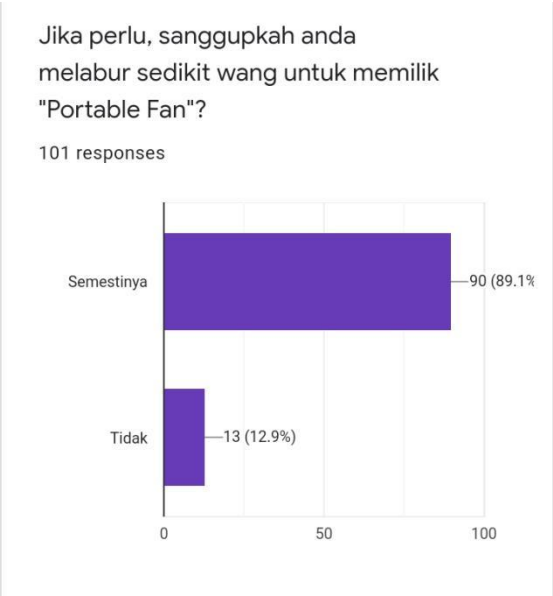
KEKERAPAN	JUMLAH
MENGGUNAKAN KIPAS	56
MENGGUNAKAN PAYUNG	17
TIDAK MEMBUAT APA-APA	28

Question 6:



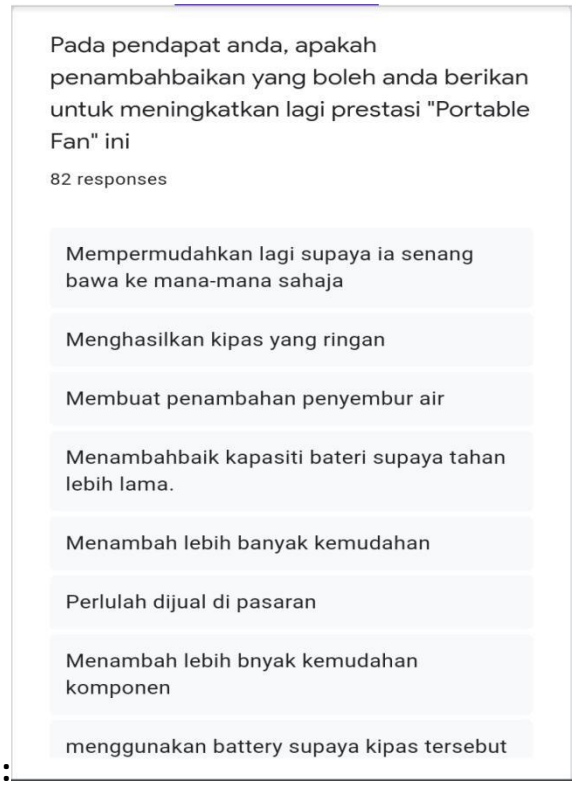
KEKERAPAN	JUMLAH
YA	94
TIDAK	8

Question 7:



KEKERAPAN	JUMLAH
YA	90
TIDAK	13

Question 8



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4.3: RECOMMENDATIONS

In the study we did, there are some suggestions for improvements that we will make on this OHA mobile fan project. Among them are, adding a water sprayer to the fan, improving the battery capacity to last longer and finally we will provide a package so that users can easily take it anywhere. These improvements are made to produce a more efficient and modern portable fan. In addition, it is also easier to use by anyone and no matter where you are. Not only that, users can use it during emergencies such as the absence of electricity.

4.4: FORMULATION

To ensure that our project can work better and more efficiently, we have made a popular vote between the mobile fan on the market or OHA mobile fan, and we got high votes because this OHA mobile fan has many uses and saves time. This can solve the problem of users not to worry when there is no electricity and also in the hot season.

ATTACHMENT

i.Carta Gantt

Projek aktiviti	Minggu													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Taklimat mengenai projek 2														
Pembahagian tugas														
Pencarian bahan projek														
Memulakan proses pemasangan														
Penambahan idea														
Menguji projek dan penambah baikan projek														
Membuat kemasan projek														
Membuat slide pembentangan														
Penyediaan laporan														
Pembentangan projek														