POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

JABATAN KEJURUTERAAN ELEKTRIK

FLOOD SYSTEM WITH IOT

PROPOSAL REPORT: PROJECT 1

DIPLOMA KEJURUTERAAN ELEKTRONIK (KOMUNIKASI)

SESI 1 2021/2022

TITLE

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SESSION: **SESI 1 2022/2023**

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2. I acknowledge that 'The Project above' and the intellectual property therein is theresult of our original creation /creations without taking or impersonating any intellectual property from the other parties.

3. I agree to release the 'Project' intellectual property to 'The Polytechnics' to meetthe requirements for awarding the **Diploma in Electrical Engineering** to me.

Made and in truth that is recognized by;

a) **CHE ASHMAN BIN CHE HASAN**) .
(Identification card No: - 020518030887) ....……
) **CHE ASHMAN BIN CHE HASAN**

In front of me, **PN NURUL AKMAR BINTI KAMARUDDIN** (Clickhere to enter text.)) ....……
As a project supervisor, on the date:) **PN NURUL AKMAR BINTI KAMARUDDIN**

ACKNOWLEDGEMENT

Praise and gratitude to Allah S.W.T for providing me with sufficient physical and mental power to complete my final year project up to completion. Here I express my infinite gratitudeand thanks to my supervisor, **PN NURUL AKMAR BINTI KAMARUDDIN** , for him unwavering support, guidance, sharing of opinions and unfailing patience throughout the project's duration. Under him guidance, I've learned a lot, both practically and intellectually. Aside from that, I owe a debt of gratitude to my parents and all of my friends who have aided me in the implementationof this project by providing feedback.

Finally, a million thanks to everyone who helped make this project a reality, whether directlyor indirectly.

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ABSTRACK

Floods and excessive rainfall are among the inevitable phenomena. This flood disaster is not a new thing in Malaysia as Malaysia experiences heavy rains at one time. Usually, heavy rains will often occur during the monsoon season, which is at the end of the year. This phenomenon can lead to loss of public life and destruction of infrastructure. Therefore, to prevent any loss of property and lives of the public, warning messages should be sent to the public at an early stage as a safety measure. In practice, disaster management agencies use a variety of systems to monitor flood levels. However, most of these systems are very expensive and difficult to use and maintain. As a result, we developed innovative, user -friendly water level measurements as well as affordable systems. The developed system uses a water level sensor along with an Arduino microcontroller to measure the water level and determine whether the condition is safe, precautionary or dangerous based on a predetermined level. In addition, using the apps module, the prototype will alert individuals as well as authorities via short message service (SMS). It can monitor the water level accurately and display a visual warning using a light emitting diode (LED).

1.0 INTRODUCTION

One of the unavoidable natural disasters is flooding. It happened far too quickly and had far-reaching consequences in terms of lives and property. Previously, the majority of current systems were exclusively focused on a few topics. Furthermore, because they lack information and data on weather conditions, the majority of people are unable to monitor and predict when floods may come. The use of a Smart IoT Flood Monitoring System will eliminate all of the old system's flaws. The proposed approach is appropriate for both urban and rural settings. Furthermore, if people have access to the internet, they can monitor what is going on and predict if a web server flood is imminent. The proposed system has a minimal design cost and is simple to implement.

1.1 PROJECT BACKGROUND

Floods have frequently caused material, financial, and sometimes fatal losses in recent years.The population is less aware of the possibility of floods because there is no early warning system in place when they occur. In this work, the researcher devised a system for automatically detecting floods that would track water levels and issue alerts before one occurred. In order to give real-time data and determine the water level created at a specific level, this water level monitoring system uses apps with water level sensors based on IoT. This is an online-connected device that shows current water levels and is combined with a phone app to provide flood warnings in advance.

1.2 PROBLEM STATEMENT

Floods are extremely destructive, and they have a habit of destroying large cities and residential areas. Floods can also result in significant property damage and even death. It is a natural calamity in which dry terrain is abruptly flooded. Some floods occur unexpectedly and quickly. When floods strike, water carries and destroys objects such as buildings, vehicles, and different dangerous sharp wood objects that can injure people. Furthermore, because no facilities are available, the neighbourhood is unaware of the flood warning system. As a result, we intend to construct something that will benefit the community, such as an early flood warning system using IoT.

During floods, the intelligent IoT flood monitoring system plays a critical role, as a highly effective system will assist the government and society in properly managing the situation of flood victims, thereby reducing the impact of disasters. It is critical to make this system more accessible, easy to use, and cost-effective, and most importantly, to effectively inform the public as early as feasible. The proposed system will have a basic monitoring interface, as well as sufficient data on flood levels and future short-term water levels.

1.3 OBJECTIVE

The main objective of our proposed system is To build a monitoring system that can identify affected communities as providing information on current water levels in specific areas, such as rivers and drains. When, the water level rises above the critical level, the system sends a warning notification to the user. Our system will alert for three levels, namely normal level (Green LED), alert level (orange LED) and Danger level (Red LED). In addition, our next objective **is to develop a monitoring system that can acknowledge affected comunity**. The system consists of apps that allow the community to know about the rise of water. That way the surrounding community can get information more quickly and accurately to go through the initial preparations. The system also consists of water level sensor, Arduino UNO as a system microcontroller, WiFi or GSM module, and the platform that we will unfold next.

1.4 PROJECT SCOPE

We plan to conduct tests in the Kelantan River in order to determine the level and elevation of the river when it is flooded. The study's scope also includes residential areas, low-lying areas, and industrial districts, which frequently face industrial system failures that result in flash floods. Designing a flood alarm system that can give early warning of water levels up to unsafe levels is one of the study's goals. The water level is divided into four categories: safe, moderate, alert, and emergency.

1.5 PROJECT SIGNIFICANCE

Our research is crucial because it will assist those who find it difficult to inform others about the early flood system. People will therefore be more cautious of flood disasters as a result of this system. So, using this system also allows us to prevent things from happening, including the loss of valuables, the destruction of crucial records, etc. The community needs facilities to be aware and receive information more promptly and clearly, thus this project is important in that regard. There are a lot of concerns regarding the deaths brought on by this catastrophe. Therefore, by using this technique, we can solve the issue and ensure that the locals understand how crucial it is to keep an eye on the flood-affected area in order to survive any calamities.

1.5 SUMMARY

The research in this chapter explains where the ideas and inspiration for the project came from comes the form. The main goal of this research is to develop a flood early warning system. This study only focuses on the possibility of a sensor technology system and how it can help residents of homes affected by floods. As a result, not only do these new prosthetics benefit people to stay alert, they help them.

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

We also look for facts by reviewing information that has been published regarding the topic or subject. As a result, we're on the lookout for innovative ideas and ways to get around the system quickly. This demonstrates familiarity with the knowledge group and establishes trustworthiness, allowing us to push ourselves to higher levels of thought. This document outlines past research and explains how our projects differ. We also combine and synthesise what is already known about the topic. This is one of the summaries from my research.

2.2 LITERATURE REVIEW TOPIC 1

2.2.1 SUBTOPIC LITERATURE RIVIEW

In this section, we discuss past studies interested in describing and developing flood systems with iot and the following methods:

'NurfaraliyanaSamburi1, Yasmin AydaFaizal Abbas1, Nurin Izzati Arzemi1, Azmi Sidek' .Floods and Excessive Rainfall Are Among the Unavoidable Phenomena, A Common Occurrence Since Malaysia Experienced Heavy Rain During Monsoon Season. This Phenomenon Could Cause aMajor Impact On People's Livelihood. In Order to Reduce Such Losses, A Warning Message Should Be Made Public asA Safety Precaution Thus Provide an Earlier Warning to Potential Victims. In Practice, Disaster Management Agencies Used Variety ofSystems to Monitor Arising Water Levels. These Systems Are Extremely Expensive, Complex and Hard to Maintain. The Development ofan Innovative, Affordable and User-Friendly Water Level Measurement Is Introduced In This Project. The System Uses Water Level Sensors In Conjunction With Arduino Microcontroller To Measure The Water Level Thus Determine Whether The Situation Is Safe, Alert Or Dangerous Based On The Predefined Levels. A GSM Module Is Also Embedded To The System That Will Provide Early Warning To Respective Individuals And Authorities Via Short Message Service (SMS) Alongside A Warning Beacon

In a previous study conducted by Akhiruddin designing water level monitoring system using a microcontroller Arduino Nano and Ultrasonic sensor output Thingspeak platform as an information medium water levels . Then there is also research conducted by Gilang Bramantio Elvan Suryatno designing water level monitoring system using a microcontroller Wemos D1 and Ultrasonic sensor output Telegram platform as an information medium water levels . In the other study, which is still associated performed by research by Riny Sulistyowati, Hari Agus Sujono, and Ahmad Khamdi Musthofa designing the system monitors the water level using a microcontroller 8535 and sensors Ultrasonic with output SMS as an early warning, Warning light as a medium of information with lights, Buzer to output danger, Thus viewed from a previous study, thingspeak platform as water level monitoring information in realtime and telegram platform as an early warning of flooding is very effective in order to display the information in real time and quickly. This study aims to provide information in real-time water level data using the platform thingspeak and flood early warning platform using

telegram to alert people of the danger of floods so as to reduce the impact of losses due to flooding.

'K Subramanya Chari1' The Earlier several researchers implemented flood monitoring and alerting system based on ARM7 processor and Arduino controller. But, ARM7 wasn't real time operating system (RTOS) [2-4], speed is very less and more expensive. Arduino is a controller and additionally it requires extra modules to interact with cloud like the global system for mobile communications (GSM), blue tooth, Wi-fi and LAN cable [5-7]. Several works like [8, 9] investigated a study on flood disaster and its management in the country of Malaysia, where they centered the significance of identifying best solutions to educate if there was a strike of disaster. In addition, author in [5] suggested four action states such as readiness, reaction, reconstruction and reduction. In this way, recent days most of the researchers tried to find out the mitigation of flood control and there by reducing the risks. Later, due to the easiness and wider range of applications in various field, IoT-based system attracts the researchers to implement an intelligent flood control and alert management system.

2.3 LITERATURE REVIEW TOPIC

2.3.1 SUBTOPIC LITERATURE RIVIEW

1. Paper 1: Sistem Pemantauan Banjir Secara Jarak Jauh

2. Paper 2: Water Level Monitoring and Flood Early Warning Using Microcontroller With IoT Based Ultrasonic Sensor

3. Paper 3: IoT-based Flood Monitoring and Alerting System using

Raspberry Pi

4. Paper 4; The Implementation of an IoT-Based Flood Alert System

5. Paper 5: IOT Based Early Flood Detection and Avoidance

Item/Title	Paper 1	Paper 2	Paper 3	Paper 4	Paper 5
Objectives	i).Detect the rise in water level upstream and can be monitored periodically. ii).Provide warning in the form of text messages as well as sirens and warning lights if danger is detected. iii).Design a device system that can detect the presence of floods in advance so that residents can be prepared to move.	Many of the impacts of flooding not only material losses, and even fatalities. Effects of flooding can be reduced if the public can monitor real-time water level and the flood early warning so that people can be aware before the floods came.	i)implementation of an intelligent analysis of flood risk is necessitated for the field of research in Disaster management ii) This article implements an intelligent IoT-based flood monitoring and alerting system using Raspberry Pi model	1)flood warning system that can detect the water level and measure the speed of the rise of water level 2) the measurement result is sent as the alert to a mobile phone through Short Message Service (SMS).	There are some places that are more prone to flooding than other places, the implementation of flood alert systems near any major water area or body of water provides critical information that can protect property and save lives.
Problem Statement	Their residential areas will be flooded but due to lack of accurate information they did not have time to make any preparations and	Thus viewed from a previous study, thingspeak platform as water level monitoring information in realtime and telegram platform as an early warning of flooding is very effective in order to display the information in real time and quickly	1) The loss of properties and living population is getting enhanced by every year due to the dynamic alterations in weather conditions which results in heavy floods.	i)Providing a quick feedback on the occurrence of the flood is necessary for alerting resident to take early action such as evacuate quickly to a safer and higher place.	-Use an android Application to intimate the users. This Project focuses on providing early detection of flooding and the measures to minimise and avoid floods

Methodology	Water levels are classified into three levels, namely the first level as a normal level, the second level as an alert level and the third level as a danger level. If the water flow sensor detects a heavy flow of water on the second level, then it will also display a warning because the water level will rise faster than the normal rate. The system will also issue a warning if the water level sensor detects the water level on the third level regardless of the speed of the water flow.	The design tool is divided into two stages, the design stage and the stage of making a block diagram of a software system. The system uses a microcontroller and output information nodemcu water level that can be viewed in real time on the platform thingspeak	Raspberry pi with water and rain sensors to reckon flood symptoms and alert official authorities with notification. Further, it provides an alarm to nearby villages, which alerts them to vacate from there since there will be a chance of flood occurrence. In this project, measurement of water level is done by utilizing water sensors. In addition, rain sensors also employed to assess the level of rain in particular area. Later, these sensors send the information regarding water and rain measurements to raspberry pi over IoT.	Waterfall Model is flows steadily downwards (like a waterfall) through the seven phases; comprises of Planning, Requirement, Design, Implementation, Testing, Maintenance and Documentation. The following are the details of each phase for starting with the backgroup study until the completion of project.	For alerting the users in the area of the flood the BLYNK IOT platform and the Android application on the smartphone is being used where all the alerts for the user can be delivered and the data about the crisiscan disaster control can be obtained by the user as necessary.Submit your manuscript electronically for review. prepare it in two-column format, including figures and tables(untill it don't fit properly and data is not visible).
Sensor Used	Arduino Uno	Ultrasonic sensor	-Rain sensor - Raspberry pi	-Raspberry pi -GSM	-Arduino, Android, BLYNK IOT, ESP8266 Wifi Module, Ultrasonic Sensor

2.2 SUMMARY

We may more readily combine and summarise our initiatives using the conclusions we derive from the above-mentioned topic themes. We also learn how to generate new technologies that range from ordinary to remarkable. Furthermore, by studying those themes, we can generate fresh ideas and figure out how to structure our product in a more detailed and attractive manner. We can also differentiate and evaluate what we accomplish in a bigger context to what other academics on your field have done in the past.

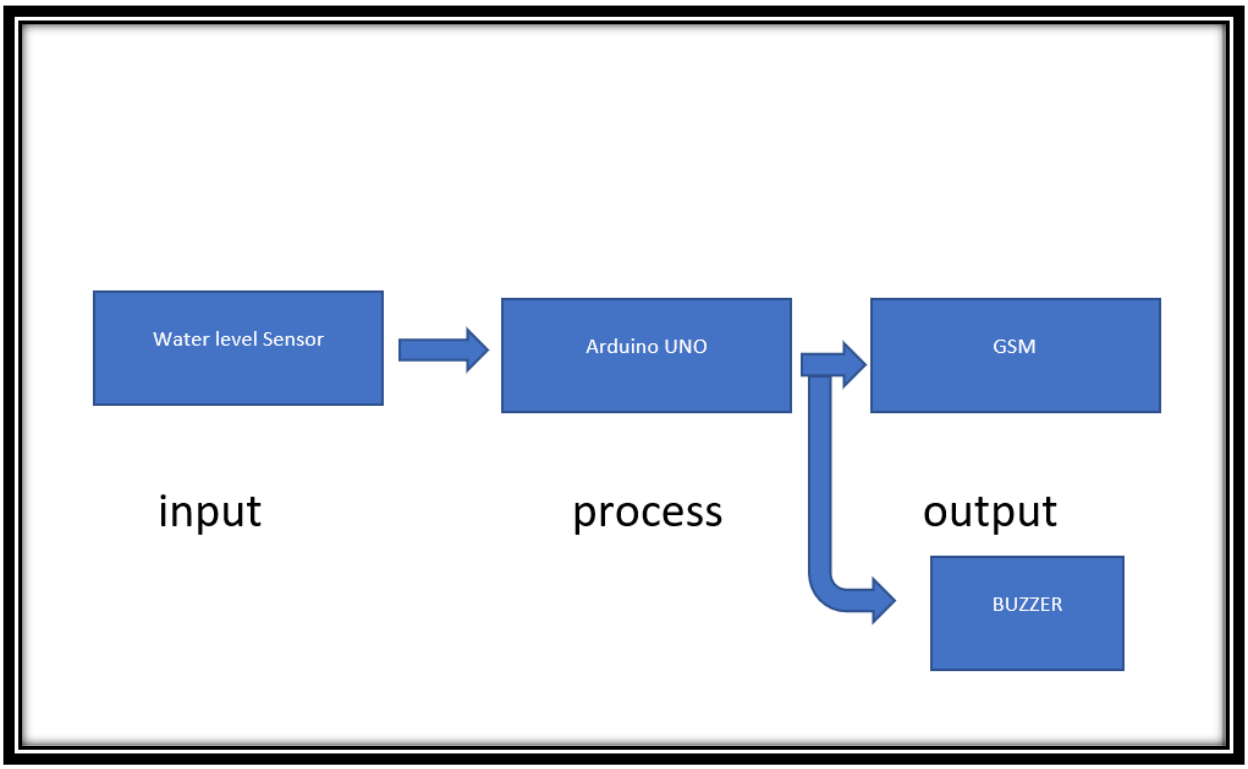
3.0 METHODOLOGY

3.1 INTRODUCTION

Input, control system, and output are the three aspects of the remote flood monitoring system technique. The first level is a normal level, the second level is an alert level, and the third level is a danger level, with the first level being the usual level. If the water flow sensor detects a heavy flow of water on the second level, a warning will appear because the water level will increase faster than usual. If the water level sensor detects the water level on the third level, regardless of the pace of the water flow, the system will give a warning.

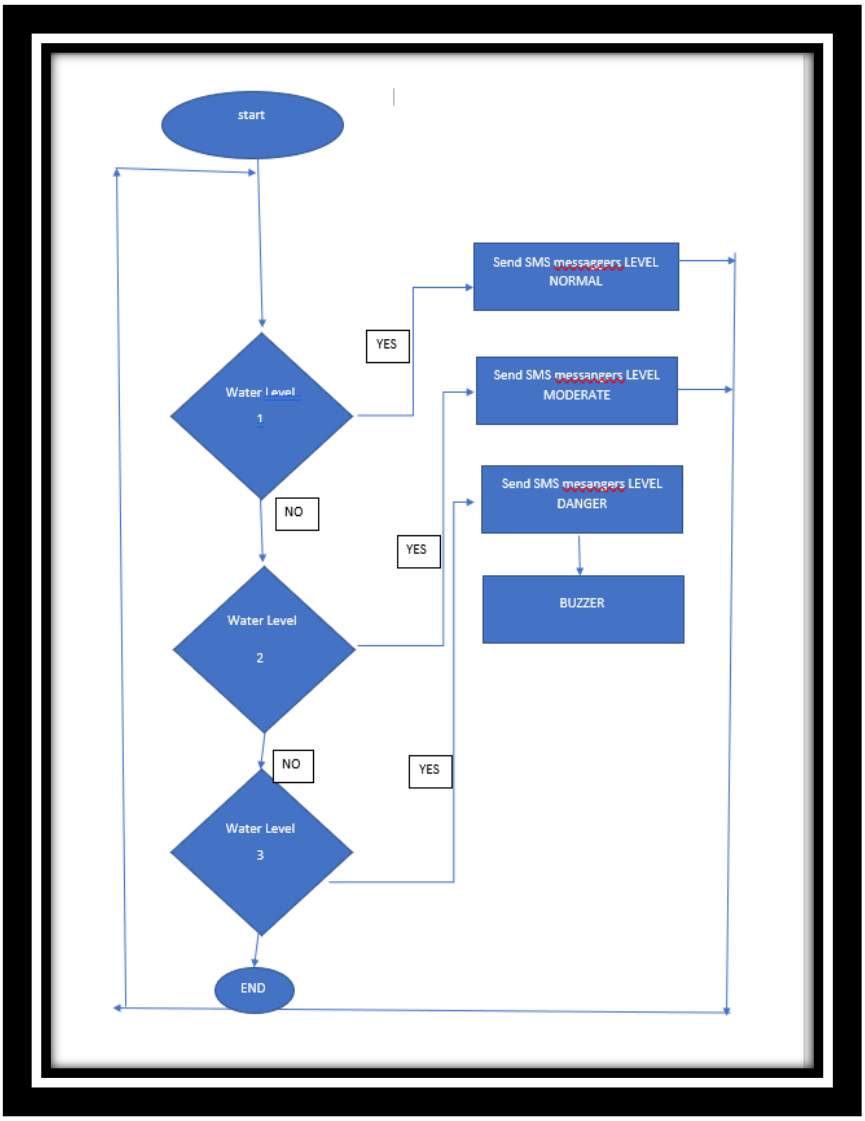
3.2 PROJECT DESIGN AND OVERVIEW

3.2.1 Block Diagram of the Project



A block diagram of a remote flood monitoring system is displayed. Input, control system, and output are the three sections of this block diagram. A water level sensor and a water flow sensor are included in the input area. The major controllers are the Arduino Uno and the GSM module, while the outputs are the buzzer, LCD, LED, and phone.

3.2.2 Flowchart of the Project 1



The diagram above is a flow chart for a remote flood monitoring system where it is categorized into two situations, namely flood conditions or vice versa. Under normal circumstances, the warning light will not illuminate and the LCD screen will display ‘Level 1’ as well as ‘Normal’ and a message will be sent. While in situations where there is a potential flood and there is no heavy water, the LCD screen will display 'Level 2' and 'Alert'. If the water level reaches the second level and the water flow is heavy, the LCD screen will display ‘Level 2’ as well as ‘Warning’; SMS will be sent to potential flood victims and warning lights will also come on. The LCD screen will display ‘Level 3’ and ‘Warning’ when the

water level reaches the third level, then a buzzer will sound and an SMS will be sent to the potential flood victims and a warning light will also come on.

3.1.1 METHODOLOGY FLOWCHART

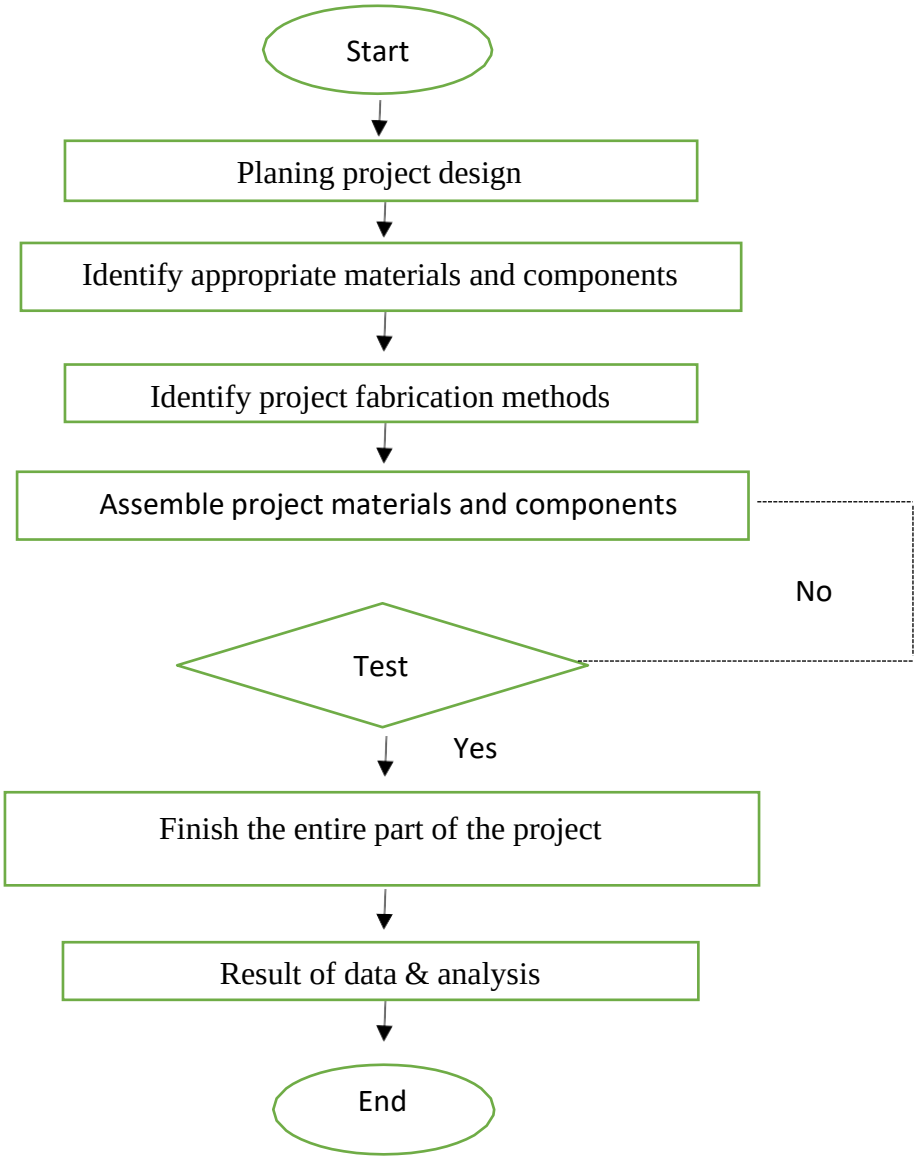
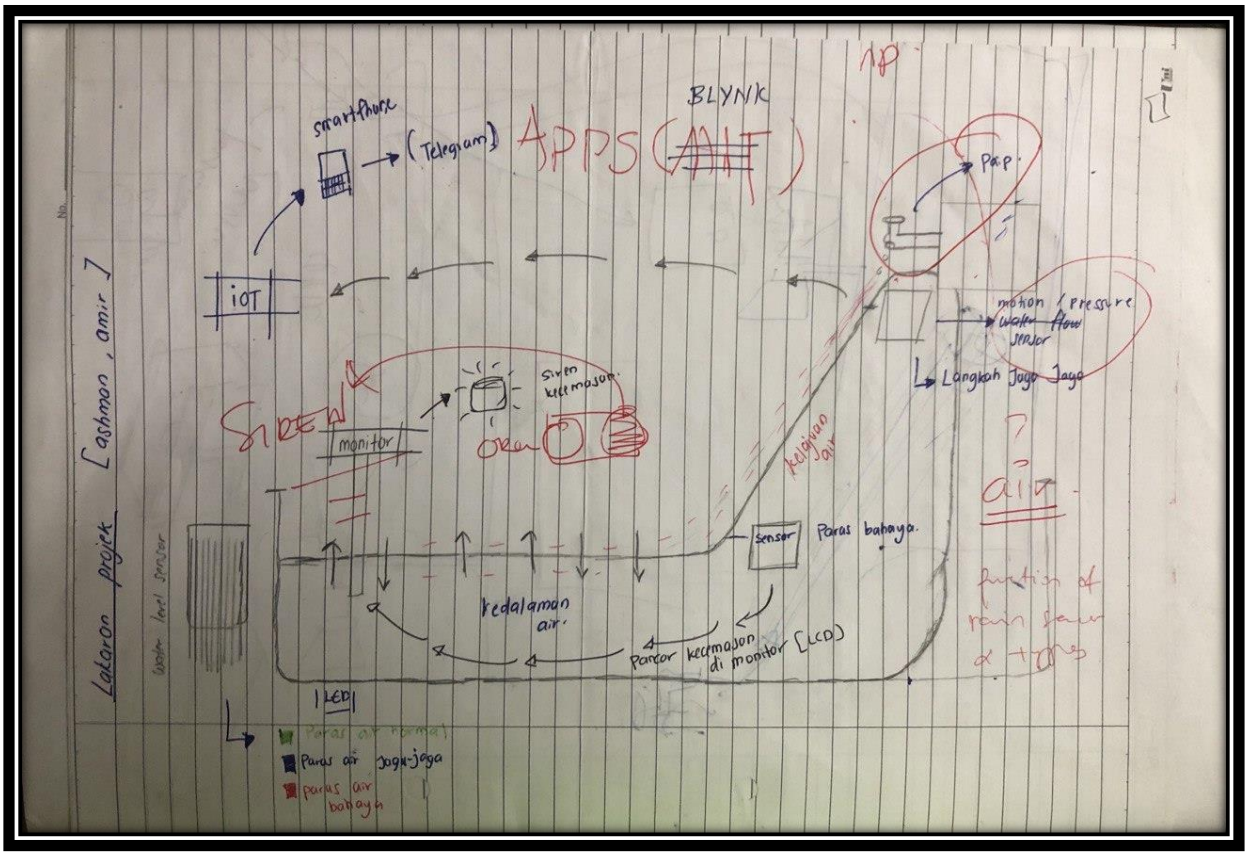


Figure 3.1.1 Project Development Methodology Flowchart

3.2 PROJECT DESIGN



CASING FOR THE MODEL PROJECT

3.2.1 METHOD OF PROJECT DEVELOPMENT

This method selection procedure is crucial in ensuring that the method chosen is precise and appropriate for the product. This approach selection will help us avoid wasting money and time. As a result, it is critical to complete this technique selection process. There are two of them:

- **SOFTWARE METHOD**

Arduino Code:

The Arduino board connects to a computer via USB and then to the Arduino development environment (IDE). The user creates Arduino code in the IDE and then uploads it to the micro controller, which runs it and interacts with sensors and piezo buzzer. The Arduino code is written in C++, with a few extra methods and functions that we'll go through later. C++ is a computer language that is easy to understand. A 'sketch' (the name given to Arduino code files) is processed and compiled to machine language when we produce it.

Encoding with Arduino code is the method of choice. We use a USB cord to connect the Arduino to the PC, then open the Arduino IDE and pick the appropriate board and port. Then, copy the code and open it in the Arduino IDE until the code is uploaded to the Arduino. This method can be used to demonstrate how the Social Distancing Detector is processed automatically with buzzer when motion sensor detect the the limit of distance between communities. Figure 3.2.1 (a) below shows Arduino Encoding.

sketch_dec09a | Arduino 1.8.19

File Edit Sketch Tools Help

sketch_dec09a §

```
#include "user_interface.h"

  void app_loop();
}

#include "Settings.h"
#include <BlynkSimpleEsp8266_SSL.h>

#ifndef BLYNK_NEW_LIBRARY
#error "Old version of Blynk library is in use. Please replace it with the new one."
#endif

#if !defined(BLYNK_TEMPLATE_ID) || !defined(BLYNK_DEVICE_NAME)
#error "Please specify your BLYNK_TEMPLATE_ID and BLYNK_DEVICE_NAME"
#endif

#include "BlynkState.h"
#include "ConfigStore.h"
#include "ResetButton.h"
#include "ConfigMode.h"
#include "Indicator.h"
#include "OTA.h"
#include "Console.h"

inline
void BlynkState::set(State m) {
  if (state != m && m < MODE_MAX_VALUE) {
    DEBUG_PRINT(String(StateStr[state]) + " => " + StateStr[m]);
    state = m;

    // You can put your state handling here,
    // i.e. implement custom indication
  }
}
```

sketch_dec09a | Arduino 1.8.19

File Edit Sketch Tools Help

sketch_dec09a §

```
    printDeviceBanner();

    if (configStore.getFlag(CONFIG_FLAG_VALID)) {
      BlynkState::set(MODE_CONNECTING_NET);
    } else if (config_load_blnkopt()) {
      DEBUG_PRINT("Firmware is preprovisioned");
      BlynkState::set(MODE_CONNECTING_NET);
    } else {
      BlynkState::set(MODE_WAIT_CONFIG);
    }
  }

  void run() {
    app_loop();
    switch (BlynkState::get()) {
    case MODE_WAIT_CONFIG:
    case MODE_CONFIGURING:       enterConfigMode();    break;
    case MODE_CONNECTING_NET:    enterConnectNet();    break;
    case MODE_CONNECTING_CLOUD:  enterConnectCloud();  break;
    case MODE_RUNNING:           runBlynkWithChecks(); break;
    case MODE_OTA_UPGRADE:       enterOTA();           break;
    case MODE_SWITCH_TO_STA:     enterSwitchToSTA();   break;
    case MODE_RESET_CONFIG:      enterResetConfig();   break;
    default:                     enterError();         break;
    }
  }

};

Edgent BlynkEdgent;
BlynkTimer edgentTimer;

void app_loop() {
    edgentTimer.run();
    edgentConsole.run();
```

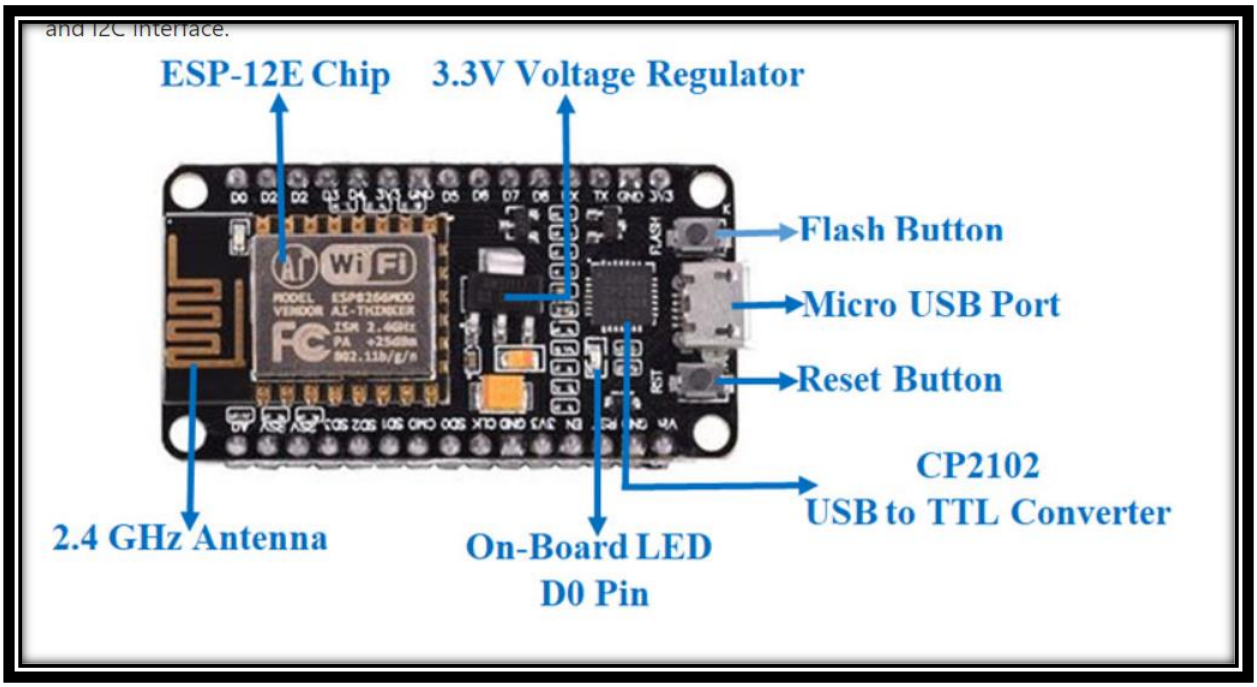
```
Error downloading https://raw.githubusercontent.com/espressif/arduino-esp32/gh- pages/package_esp32_index.json
```

3.2.1MATERIAL EQUIPMENTS

Material selection is a step in the process of designing any physical object. The selectionof materials must be appropriate to the project to be carried out to avoid losses.

1)NodeMCU ESP8266 Specifications & Features

- Microcontroller: Tensilica 32-bit RISC CPU Xtensa LX106
- Operating Voltage: 3.3V
- Input Voltage: 7-12V
- Digital I/O Pins (DIO): 16
- Analog Input Pins (ADC): 1
- UARTs: 1
- SPIs: 1
- I2Cs: 1
- Flash Memory: 4 MB
- SRAM: 64 KB
- Clock Speed: 80 MHz
- USB-TTL based on CP2102 is included onboard, Enabling Plug n Play
- PCB Antenna
- Small Sized module to fit smartly inside your IoT projects



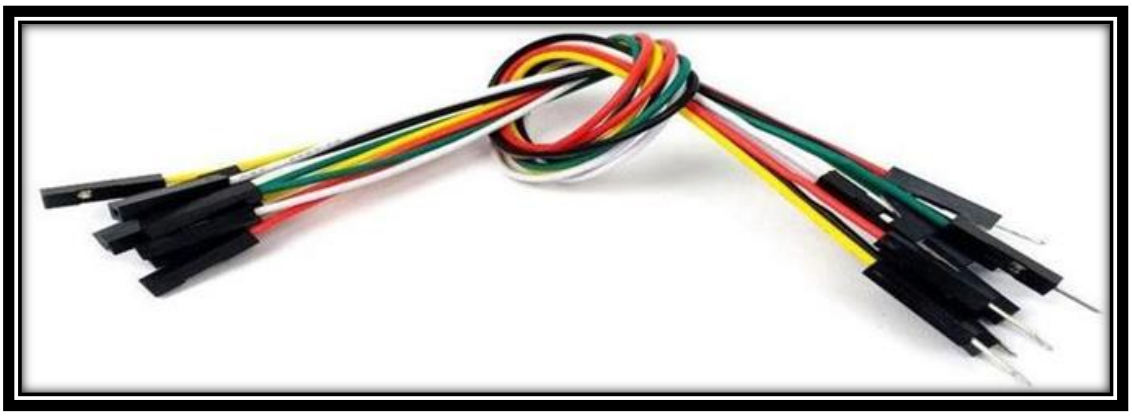
2)**Jumper Wire M/F**

Jump wires (also called jumper wires) for solderless bread boarding can be obtained in ready-to-use jump wire sets or can be manually manufactured. The latter can become tedious work for larger circuits. Ready-to-use jump wires come in different qualities, some even with tiny plugs attached to the wire ends. Jump wire material for ready-made or homemade wires should usually be 22 AWG (0.33 mm2) solid copper, tin-plated wire - assuming no tiny plugs are to be attached to the wire ends. The wire ends should be stripped 3⁄16 to 5⁄16 in (4.8 to 7.9 mm). Shorter stripped wires might result in bad contact with the board's spring clips (insulation being caught in the springs). Longer stripped wires increase the likelihood of short-circuits on the board. Needle-nose pliers and tweezers are

helpful when inserting or removing wires, particularly on crowded boards. [7] Jumper wire M/F picture in figure 3.2.2 (e) below.

Applications:

- Connect sensors to your NODE MCU BOARD.
- Connect a breadboard to your NODE MCU BOARD.
- Connect other hardware PCB's together.
- Wire hardware in a final product.



3) **RAIN SENSOR**

Wiring Rain Sensor with Arduino

Let’s hook the rain sensor up to the Arduino.

First you need to supply power to the sensor. For that you may connect the VCC pin on the module to 5V on the Arduino.

However, one commonly known issue with these senors is their short lifespan when exposed to a moist environment. Having power applied to the sensing pad constantly, speeds the rate of corrosion significantly.

To overcome this, we recommend that you do not power the sensor constantly, but power it only when you take the readings.

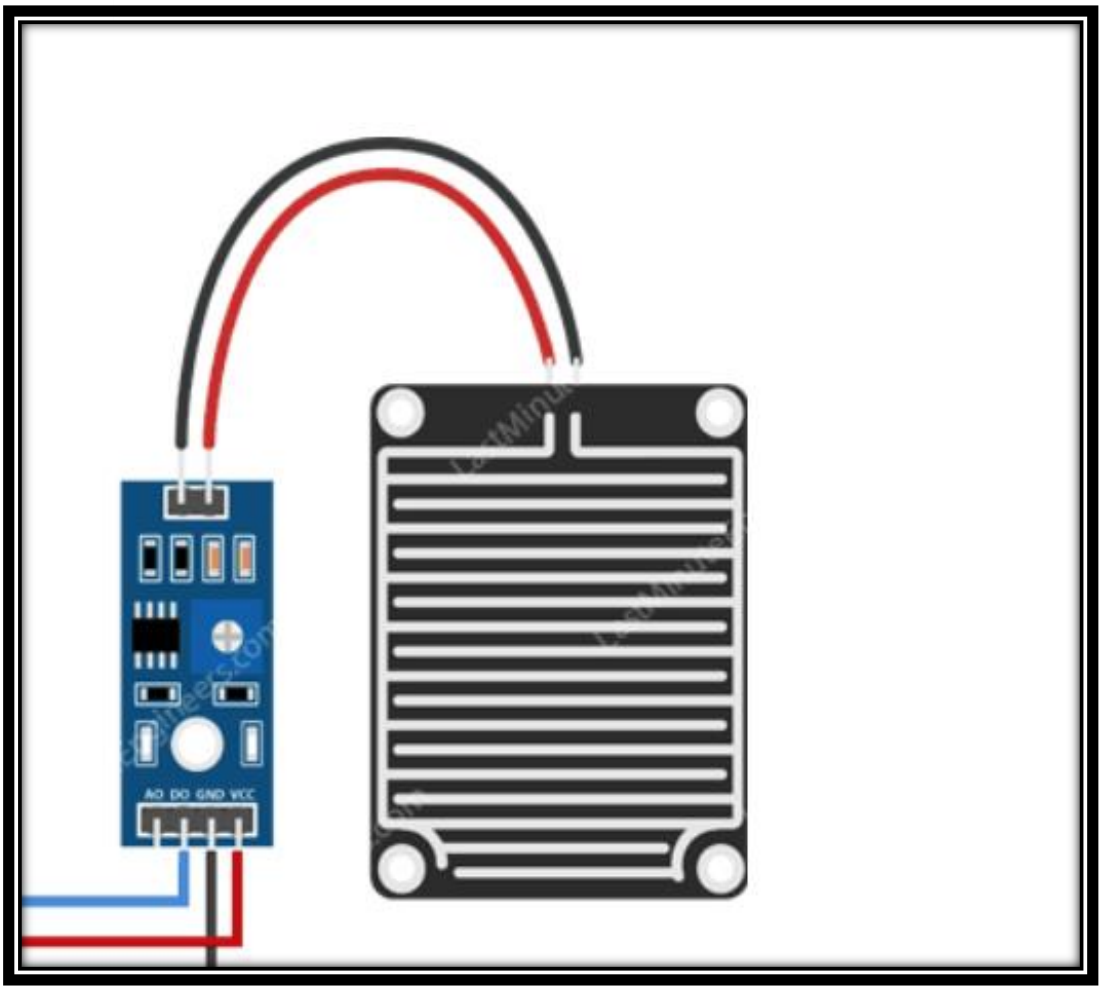
An easy way to accomplish this is to connect the VCC pin to a digital pin of an Arduino and set it to HIGH or LOW as as per your requirement.

Also the total power drawn by the module (with both LEDs lit) is about 8 mA, so it is okay to power the module off a digital pin on an Arduino.

So, let’s connect the VCC pin on the module to the digital pin #7 of an Arduino and GND pin to ground.

Finally, connect the DO pin on the module to the digital pin #8 on your Arduino.

The following illustration shows the wiring.



4) **LED**

A light-emitting diode (LED) is a semiconductor device that emits light when current flows through it. Electrons in the semiconductor recombine with electron holes, releasing energy in the form of photons. The color of the light (corresponding to the energy of the photons) is determined by the energy required for electrons to cross the band gap of the semiconductor.[5] White light is obtained by using multiple semiconductors or a layer of light-emitting phosphor on the semiconductor device.

5) **Piezo Buzzer**

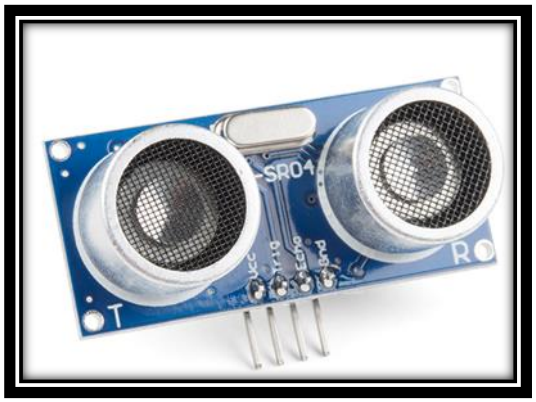
Piezo buzzers are used in applications similar to magnetic buzzers. Piezo buzzers are constructed by placing electrical contacts on two disc faces of piezoelectric material and then supporting the disc at the inner edge of the enclosure. When a voltage is applied at both electrodes, the piezoelectric material changes mechanically due to the applied voltage. The movement of a piezo disk inside a buzzer produces sound in a manner similar to the movement of a ferromagnetic disk in a magnetic buzzer or speaker cone mentioned above.

6) **ULTRASONIC SENSOR**

This is the HC-SR04 ultrasonic distance sensor. This economical sensor provides 2cm to 400cm of non-contact measurement functionality with a ranging accuracy that can reach up to 3mm. Each HC-SR04 module includes an ultrasonic transmitter, a receiver and a control circuit.

There are only four pins that you need to worry about on the HC-SR04: VCC (Power), Trig (Trigger), Echo (Receive), and GND (Ground). You will find this sensor very easy to set up and use for your next range-finding project!

This sensor has additional control circuitry that can prevent inconsistent "bouncy" data depending on the application.



7) **SOLAR PANEL**

Solar panels (also known as modules or photovoltaic panels) absorb sunlight as an energy source to produce electricity or heat. It is used as a component in larger photovoltaic systems to generate electricity for commercial and residential use.

SUMMARY

This chapter research describes the project method, materials purchased, budget calculation, product design and time frame. I have made a complete explanation to get a better understanding of the project title. I also estimate costs and purchase materials in the following sections of this chapter. Furthermore, I have provided more information about the materials needed for flood early warning systems. In order to ensure that the budget in this project is reasonable, I made a careful calculation of the material purchase budget including the actual purchase price.

After that, I also discuss method selection in more depth throughout this chapter. It concerns the methods to be used to solve and create the project of concern.

RESULT AND ANALYSIS

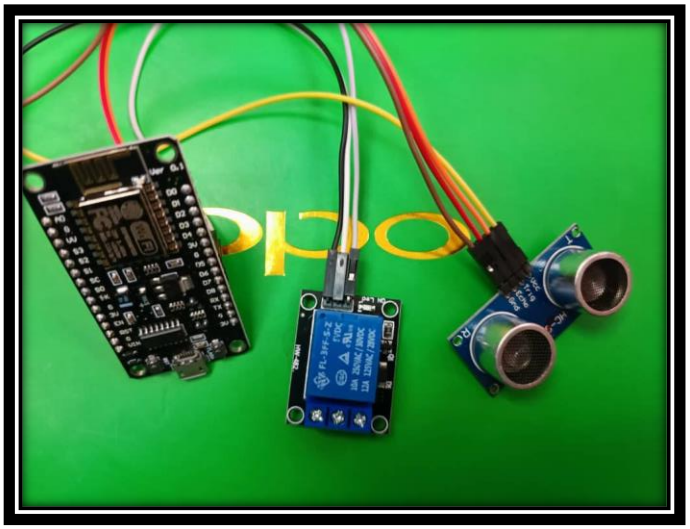
➢ 4.1 INTRODUCTION

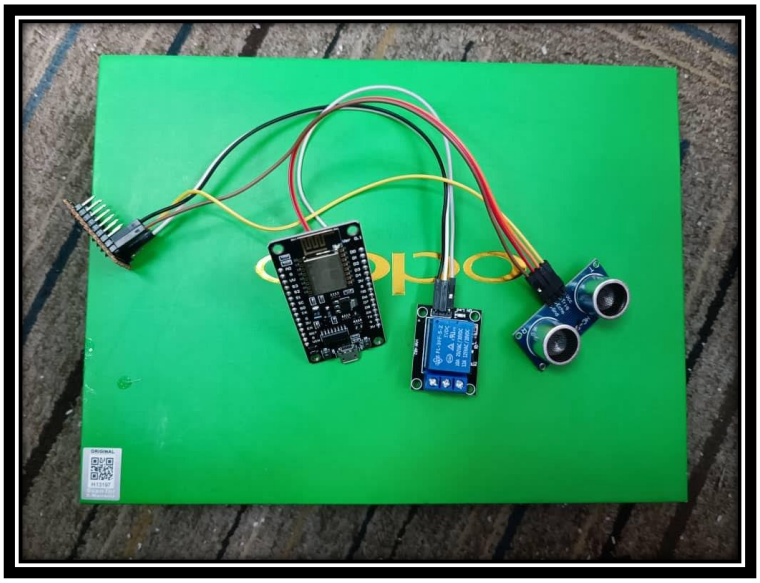
In this chapter, its had present data and analysis derived from the testing of doorbell for the deaf products. This is to ensure that all research objectives and scope are met. To ensure the project's success, every piece of data had been analyzed.

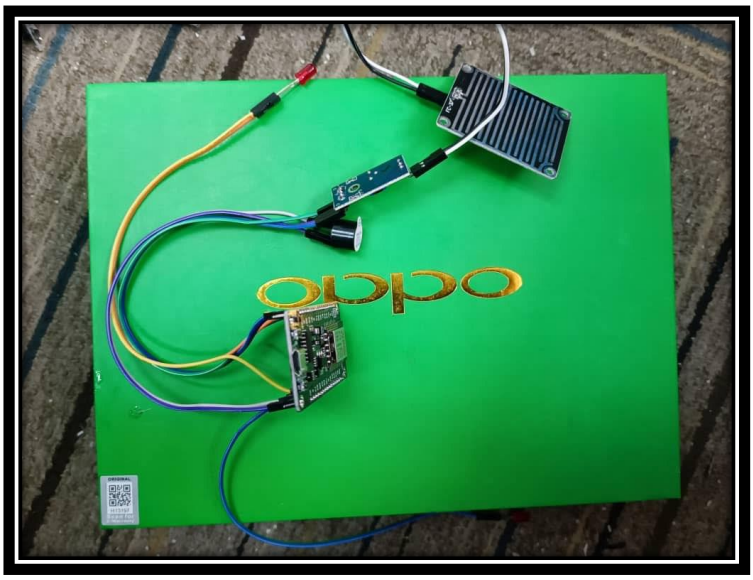
4.2 PROSES OF THE PROJECT

4.2.1 MAKE A IMPROVEMENT

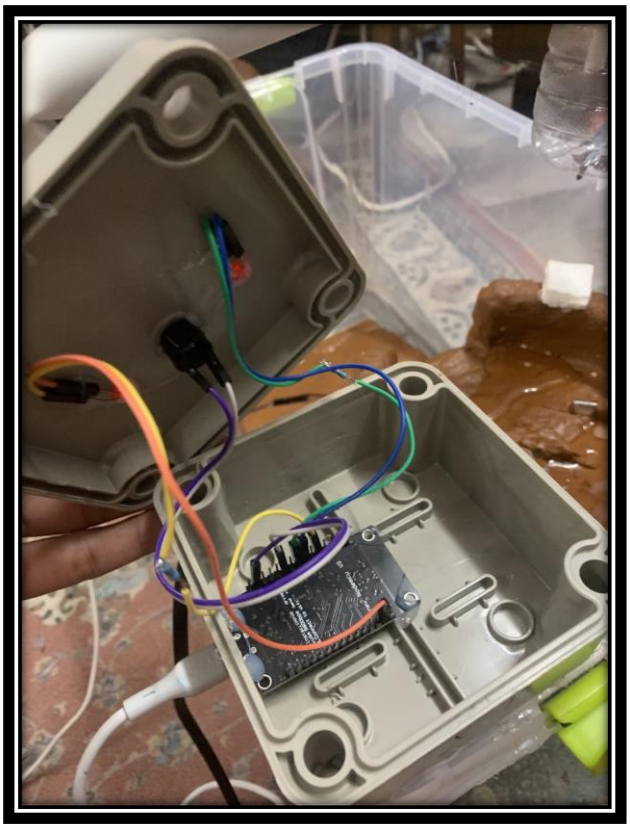
BEFORE:



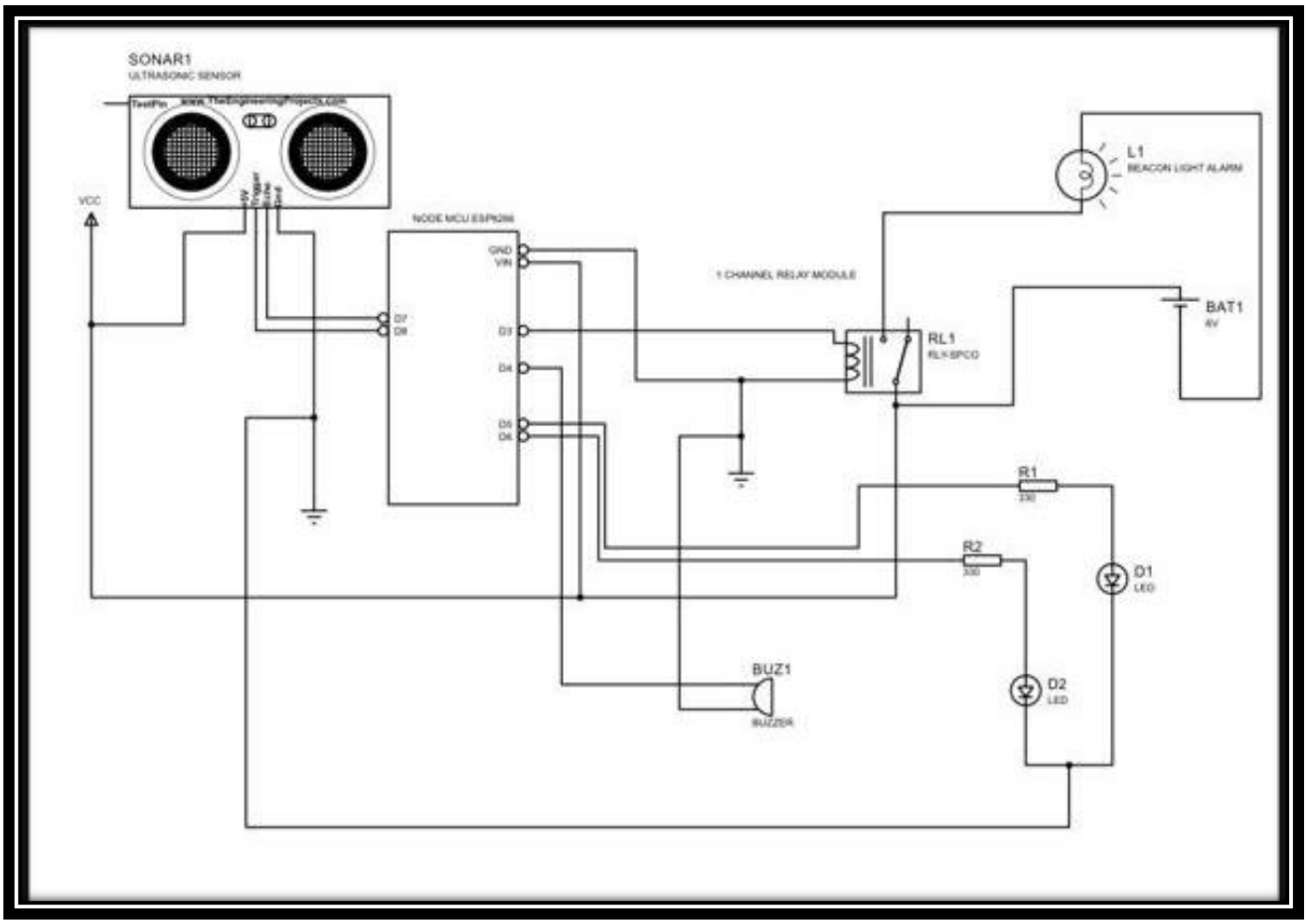




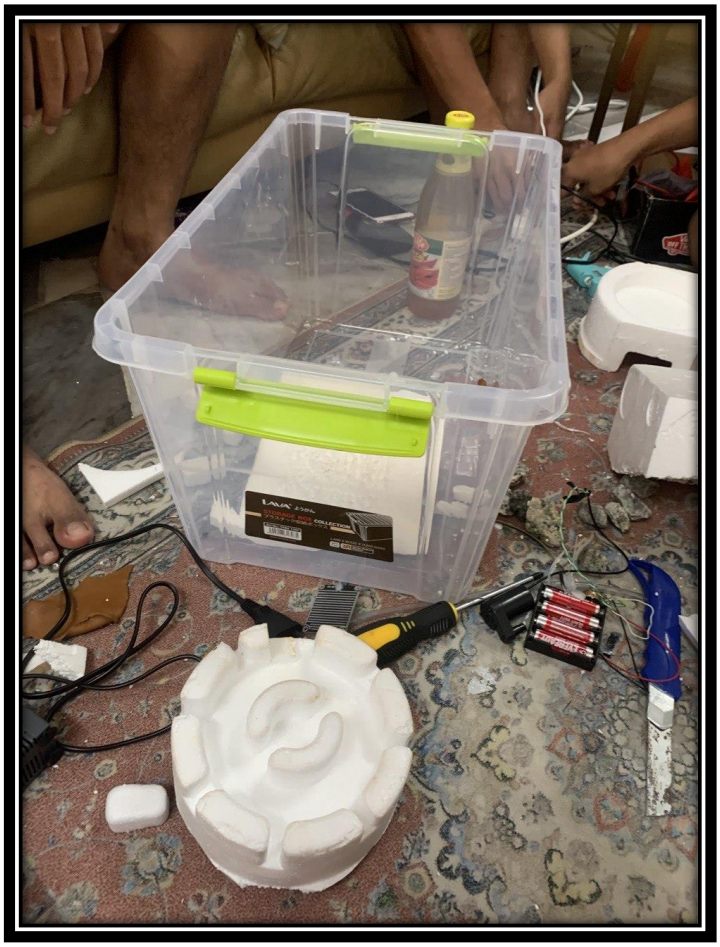
AFTER:



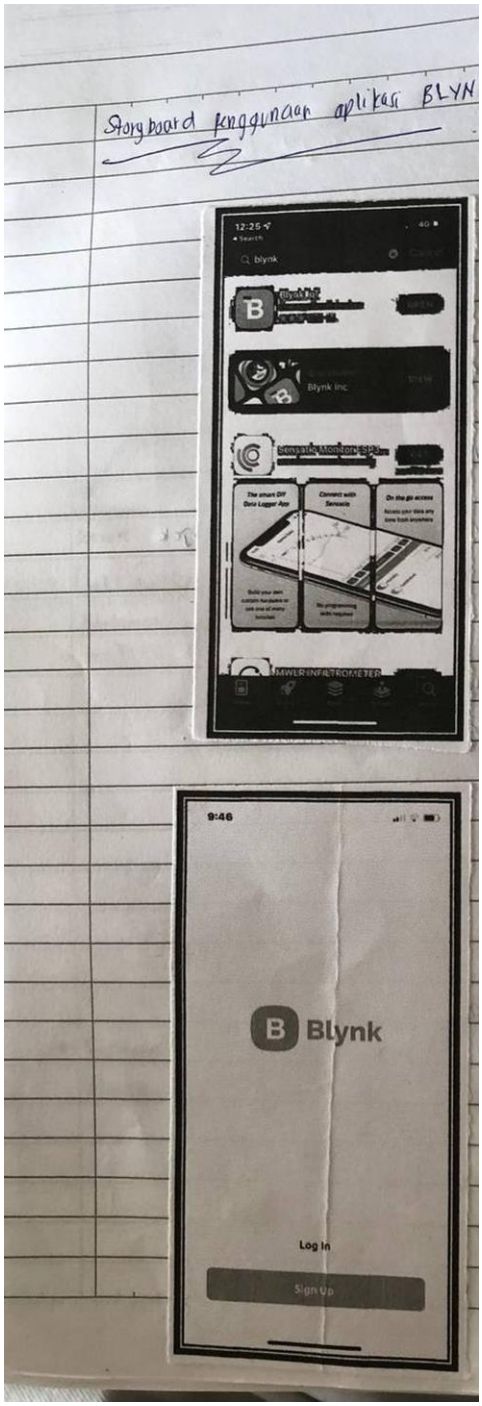
4.2.3 SCHEMATIC



4.2.3 MODEL

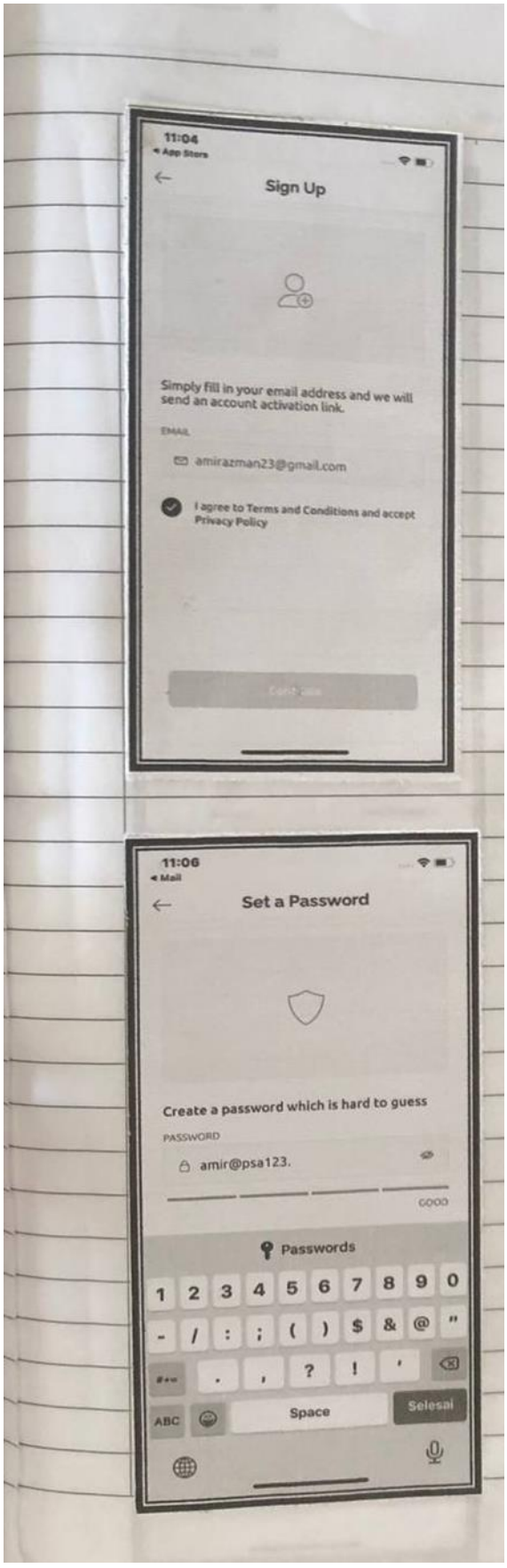


STORY BOARD SOFTWARE



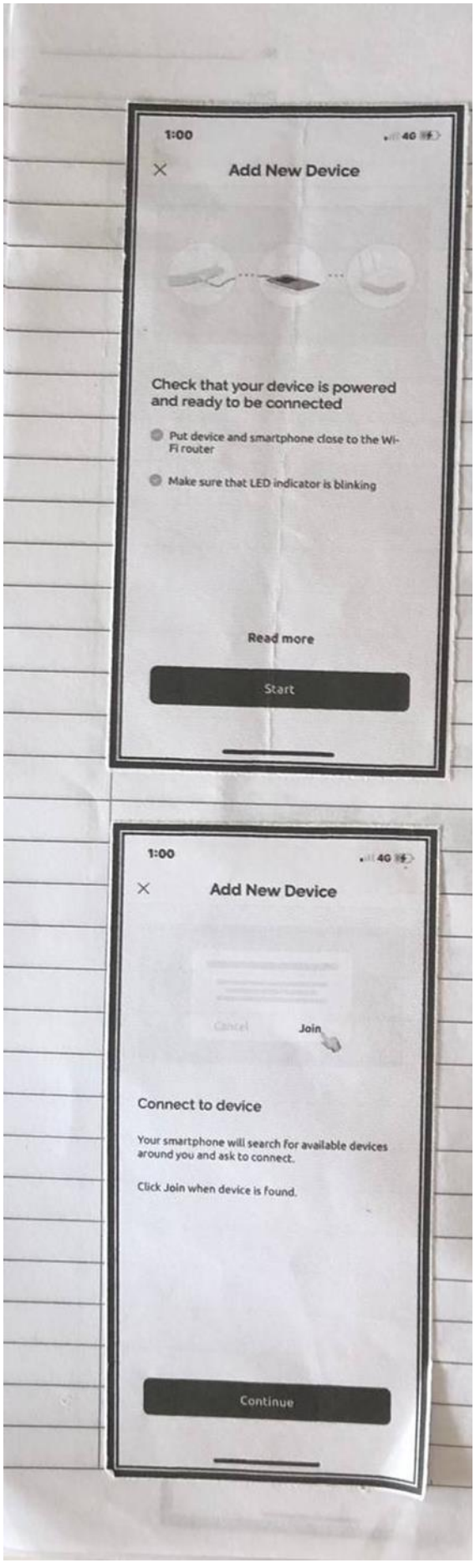
1)Langkah pertama, kita harulah muat turun applikasi BLYNK di GOOGLE STORE

2) Kita haruslah mendaftar sebagai pemilik akaun tersebut.



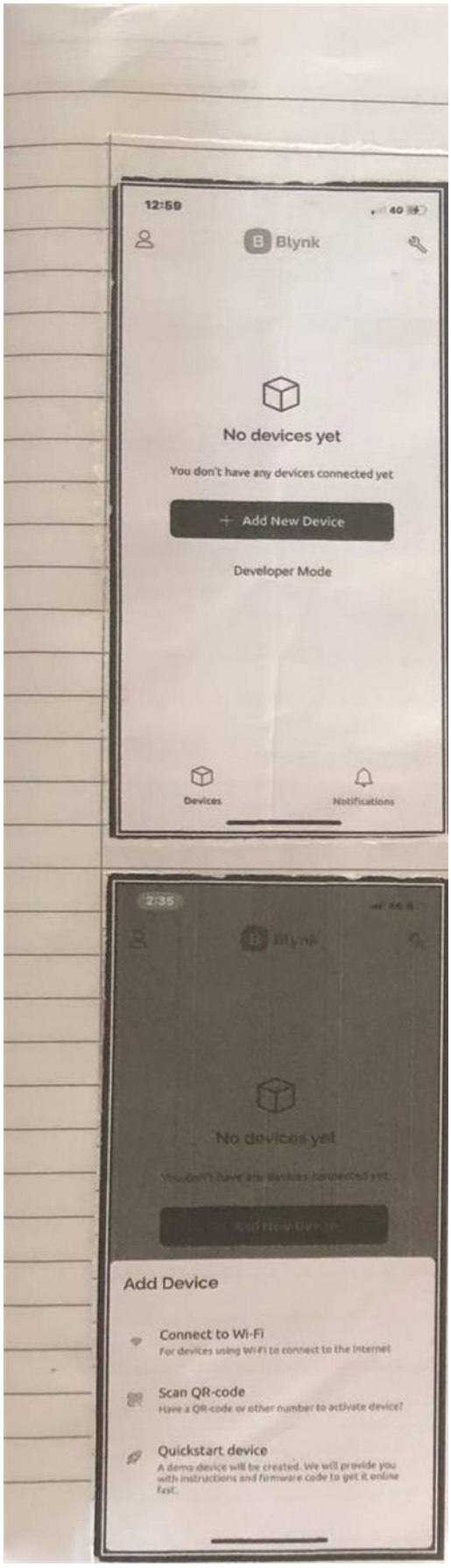
3) Kita haruslah memasukkan E-mail sebagai mendaftar .

4) Seterusnya,kita haruslah memasukkan kata laluan akaun sebagai keselamatan kita.



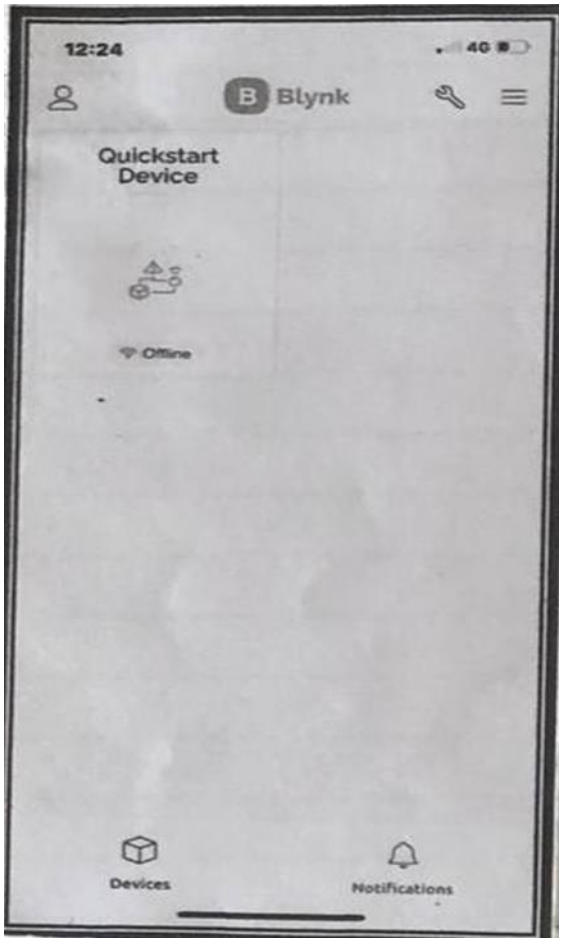
5) Kita haruslah menekan button start untuk memulai applikasi tersebut.

6)Selepas itu, tekan button continue untuk join kepada device.

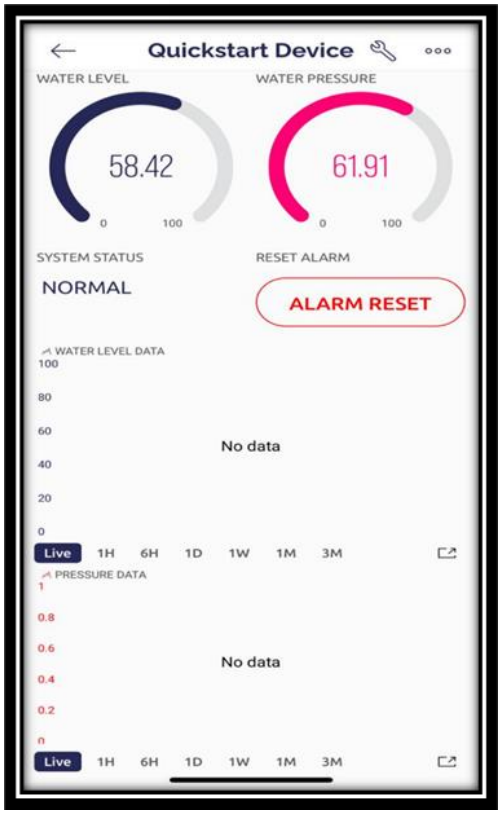


7) Kita haruslah menambah device yang baharu sebagai panacaran yang akan terdampar di aplikasi tersebut.

8) Ini adalah pancaran yang terdampar untuk menambah device.



8) Ini adalah yang akan terdampar setelah kita selesai menambah device tersebut.



9) Setelah semua selesai ,kami membuat dua device seperti dalam gambr tersebut iaitu WATER LEVEL dan WATER PRESSURE.

10) Ini adalah pancaran yang kami telah setkan,setelah air melepasi kelajuan yang bahaya maka alarm akan bebunyi dan notifikasi akan terpamer.

11) Ini adalah pancaran yang kami telah setkan,setelah air melepasi paras yang bahaya maka alarm akan bebunyi dan notifikasi akan terpamer.

4.3 DISCUSSION

As already discussed, I have learned that this project is a good achievement for myself and others. I can see that this project brings me many good advantages as well as achieving the objective. For me, this project is a good start to gain more experience and knowledge about engineering and Iot that can lead us to help more people in the future as electrical engineering students. I made this early flood warning system project for the good of the community to prepare to be careful.

4.4 SUMMARY

This chapter has explained that the results of the project have a great success rate because they grow well in the community. So much I learned from the results and gradually put them into practice in this new norm. Even with so many obstacles I went through, I kept getting better at overcoming the problem until it happened brilliantly. As the method I use, I have been able to do a lot of electrical practice that has been learned especially for how to install and so on.

4.5 CONCLUSION

For the conclusion I had discussed, I had conclude that there are advantages and disadvantages of this project. I really hope that the advantages I achieve from this product can provide benefits and convenience to the community. Next to the shortage, I also will improve and been looking for more research on this project so that it will had reached its maximum capability .Therefore, this project will be beneficial in the future. More testing and analysis should be done so that the product will be more accountable in the future.

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

In this chapter, it is explained the project in terms of finishing and suggestion based on the product performance. To ensure that the product were deserved high praise, all of the recommendation had been displayed here.

5.2 CONCLUSION

In short, this project helps in many observable ways. The benefit of this project can solve the current flood problem, which is an alert on the iot system. This project also helps people to be prepared to take care of their property and save themselves properly.

5.3 RECOMMENDATION

Sensors should be more accurate and precise; for example the sensor can detect a longer distance with a high Wi-Fi connection so it is in high quality. In a future project, the iot system regarding floods will more quickly provide data information.

5.5 SUMMARY

This chapter has explained that, this project has achieved great success. So many conclusions and recommendations can be made to help this project go on to be even better or maybe the greatest project in the future.

4.0 EXPECTED RESULT

The remote flood monitoring system project is critical, because it has the potential to reduce the expenses associated with flood disasters. It is intended that by using this approach, the number of fatalities and property damage will be reduced. Residents will be more aware of their surroundings as a result of the installation of this monitoring system, which will be positioned in flood-prone locations. GSM modules and warning lights can lessen reliance on systems that require internet access for the transmission of warning information to potential flood victims, particularly in remote locations.

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APPENDICES

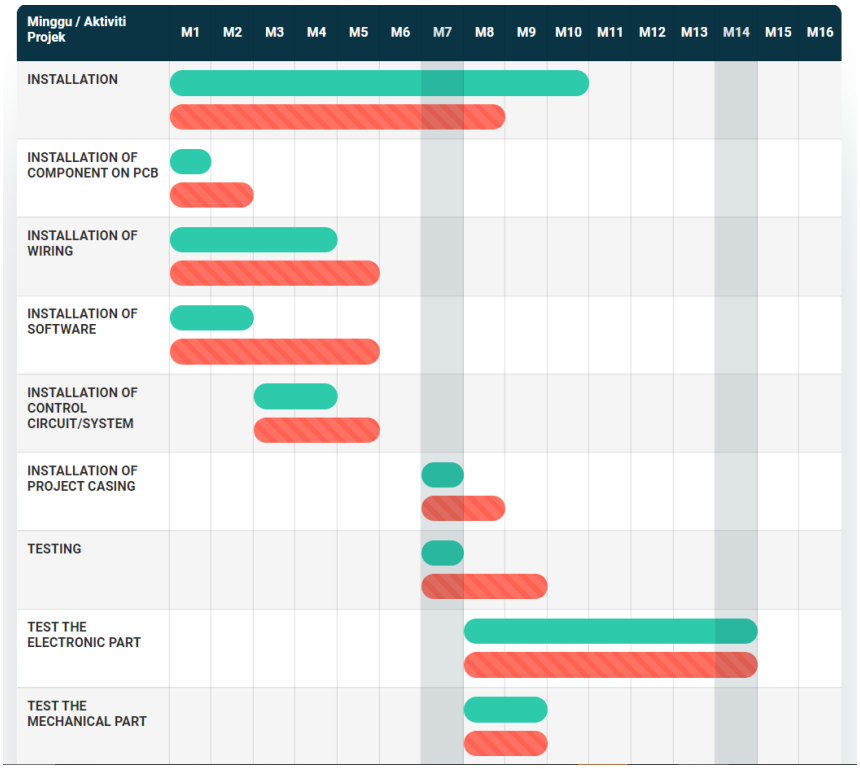
Appendix 1: Gantt Chart Project 1

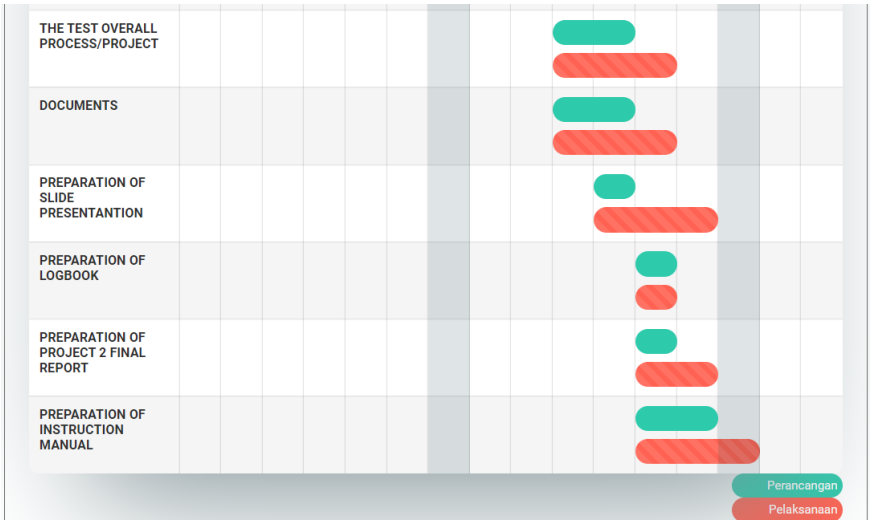
GANTT CHART

PROJECT TITLE : FLOOD SYSTEM WITH IOT

NO	Task Name	Implementation	Duration (Days)	Cost (RM)	Date	Week 1 (07.03.2022 - 13.03.2022)	Week 2 (14.3.2022 - 20.3.2022)	Week 3 (21.03.2022 - 27.03.2022)	Week 4 (28.03.2022 - 3.04.2022)	Week 5 (04.04.2022 - 10.04.2022)	Week 6 (11.04.2022 - 17.04.2022)	Week 7 (18.04.2022 - 24.04.2022)	Week 8 (25.04.2022 - 01.05.2022)	Week 9 (02.05.2022 - 08.05.2022)	Week 10 (09.05.2022 - 15.05.2022)	Week 11 (16.05.2022 - 22.05.2022)	Week 12 (23.05.2022 - 29.05.2022)	Week 13 (30.05.2022 - 05.06.2022)	Week 14 (06.06.2022 - 12.06.2022)
1	RESEARCH	Plan																	
		Actual																	
2	PROJECT BRIEFING	Plan	7																
		Actual	7																
3	PROJECT TITLE SELECTION	Plan	14																
		Actual	28																
4	BLOCK DIAGRAM AND OBJECTIVES	Plan	14																
		Actual	25																
5	FINALIZE IDEA PROPOSAL	Plan	14																
		Actual	14																
6	TITLE STUDY	Plan																	
		Actual																	
7	PRODUCT MARKET RESEARCH	Plan	21																
		Actual																	
8	VISUAL RESEARCH	Plan	21																
		Actual																	
9	DESIGNING	Plan																	
		Actual																	
10	EXPLANATION OF DESIGN	Plan	21																
		Actual																	
11	DRAWINGS AND SKETCHES	Plan	21																
		Actual																	
12	IDEA IMPROVEMENT	Plan	21																
		Actual																	
12	FINALIZE IDEA PROPOSAL	Plan	14																
		Actual																	
14	END	Plan	7																
		Actual																	

Appendix 2: Gantt Chart Project 2





Appendix 3: Project Budget

MATERIAL	TOTAL NUMBER	PRICE
Node mcu esp32	2	RM 60.00
buzzer	1	RM35.00
Ultrasonic sensor	1	RM10.00
Rain sensor	1	RM10.00
Solar	1	RM50.00
Bateri	4	RM 7.00
Cable usb	2	RM30.00
Cable electric	1 paket	RM13.00
Polisterin	3	RM15.00
Bekas model	1	RM30.00
Wayar electric	1 paket	RM15.00
Tanah liat	5 unit	RM35.00
Casing component	2	RM30.00
Water pump	2	RM50.00
Rumput tiruan	1	RM10.00
Wayar air	1	RM13.00
Paip	1	RM8.00
Bekas air	2	RM12.00
LED	2	RM4.00
	TOTAL	**RM437.00**