



## **DOUBLE PARK OWNER CALLER WITH IOT**

### **REPORT FINAL YEAR PROJECT**

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## **DECLARATION OF ORIGINALITY**

I confirm that the project report we are submitting are entirely our own work and that any material used from other sources has been clearly identified and properly acknowledged and referenced.

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# DOUBLE PARK OWNER CALLER WITH IOT

This paper presents the development of a inventing of project double park owner caller . Our society today has a dependency on advancing technology to improve our way of life as well as the lives of other individuals. Some of us are enamored with the advancement of vehicular technology as well as the way automobiles are used in order to impact our way to get to work, school or to vacate. But , the increase user of car had make a big problem that can be state as a global issues. The issues was the lack of parking space to vehicles user. It become a big problem if the user have emergency situation and will make them to double park then the blocked owner cannot go out from their park. So from that problem the people have make any solution about it among of it is leave the phone number , loose the handbrake and the latest one free space parking app but all of it not solve the problem good as well. So we have make one of the system double parking owner caller not to support of the double parking issues but to helping the issue in efficient way on the emergency situation in low cost uses . Among the feature of this double parking owner caller is it we use the Arduino UNO as a microcontroller to control the timer and display of the lcd. It also use Bluetooth hc-05 to make a wireless connection between the device and the app. After that, the device use display to show the information to the other user if them was blocked by the owner. The display also can help the other user when at night to know the device was function because it light up in dark to make it easier to see at night. Lastly, it use Passive Infrared Sensor as signal. The sensor will detect a hand wave and then it will give information to Arduino to give the alarm to the owner through app using Bluetooth. Finally, we sincerely hope that this project will help the car user to solve the problem double park in efficient way but it is also specially designed in small to make it suitable to put on the car front mirror with low cost installation.

keyword : Arduino , PIR , Double Park

## **DOUBLE PARK OWNER CALLER WITH IOT**

Kertas ini mempersembahkan perkembangan pemanggil pemilik “double park” dengan IOT. Masyarakat kita hari ini mempunyai kebergantungan terhadap memajukan teknologi untuk memperbaiki cara hidup kita serta kehidupan individu lain. Ada di antara kita yang terpicat dengan kemajuan teknologi kenderaan serta cara penggunaan kereta untuk memberi kesan kepada cara kami untuk bekerja, sekolah atau untuk mengosongkan. Tetapi, peningkatan pengguna kereta telah membuat masalah besar yang boleh dikatakan sebagai isu global. Masalahnya ialah kekurangan ruang letak kereta kepada pengguna kenderaan. Ia menjadi masalah besar jika pengguna mempunyai situasi kecemasan dan akan membuatnya menjadi doublepark maka pemilik yang disekat tidak boleh keluar dari Kawasan parkir mereka. Oleh itu dari masalah itu, orang ramai telah membuat sebarang penyelesaian mengenainya di antaranya meninggalkan nombor telefon, mengalihkan brek tangan dan aplikasi mencari tempat letak kereta terkini tetapi semuanya tidak menyelesaikan masalah yang baik juga. Oleh itu, kami telah menjadikan salah satu pemanggil pemilik tempat letak kereta system bukan untuk mengalakkan “double park” tetapi untuk membantu isu ini dengan cara yang cekap dalam keadaan kecemasan dalam penggunaan kos rendah. Antara ciri pemanggil pemilik tempat letak kereta ini ialah kami menggunakan Arduino UNO sebagai pengawal mikrokontroler untuk mengawal pemas dan paparan lcd. Ia juga menggunakan Bluetooth hc-05 untuk membuat sambungan tanpa wayar antara peranti dan aplikasi. Selepas itu, peranti menggunakan paparan untuk menunjukkan maklumat kepada pengguna lain jika mereka disekat oleh pemiliknya. Paparan juga boleh membantu pengguna lain pada waktu malam untuk mengetahui peranti berfungsi kerana ia menyala dalam gelap untuk memudahkannya dilihat pada waktu malam. Akhir sekali, ia menggunakan Sensor Inframerah Pasif sebagai isyarat. Sensor akan mengesan gelombang tangan dan kemudian akan memberikan maklumat kepada Arduino untuk memberikan penggera kepada pemilik melalui aplikasi menggunakan Bluetooth. Akhirnya, kami berharap projek ini dapat membantu pengguna kereta menyelesaikan masalah taman dua kali dengan cara yang cekap tetapi juga direka bentuk secara kecil untuk menjadikannya sesuai untuk memasang cermin depan kereta dengan pemasangan kos rendah.

kata kunci: Arduino, PIR, Double park

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### APPENDIX

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# CHAPTER 1

## INTRODUCTION

### 1.1 Background

**Double parking** can refer to parking parallel to a car already parked at the curb, double parking in attended car parks and garages, multi-space parking, or taking two metered spots with one vehicle. "Double parking" means standing or parking a vehicle on the roadway side of a vehicle already stopped, standing or parked at the curb.<sup>[1]</sup> This often prevents some of the vehicles in the first row from departing and always obstructs a traffic lane or bike lane (to the extent of often making the street impassable in one-way single-lane situations). In some areas, people double parking their cars leave the hand brake off, allowing the drivers of the cars next to the curb to push the double parked car a little forward or backward, in order to allow departing from the parking spot. Double parking in this fashion, where illegal, is often punished by ticketing or towing the offending vehicle. [1].

Double park owner caller are electronic devices that combination Bluetooth and PIR Sensor that allow to detect handwave . The purpose of this device is for the people make double park . These technologies are use to people that make double park to easy to call them when the other owner want to leave their parking space without leave any contact information.

## **1.2 Problem Statement**

Firstly, the problem statement that we have study was The latest system technology can't help to solve problem in emergency situation when the parking totally full for example at hospital it is because the latest technology just help to find the free parking space and it will not help when the parking space was totally full and the owner will also double park. Next, The latest product use the high cost installation it is because the latest product need the device to be install in every parking space to detect the car that park on the parking space. Last but not least, The user forgot to loose the hand brake or leave their phone number the we get known from our survey of questionnaire before make this project that 80% respondent agree with the statement that them always forgot to leave the contact information while double park

## **1.3 Objective**

There several objectives should be achieved at Blindness Shoes. The objectives as follows;

1. To design the device that solve the double parking issue with low cost consumption and installation

## **1.4 Scope Of Project**

Our main project is for;

- ❖ Car user

## **1.5 Significant Project**

- ❖ Able to detect handwave to call owner that did double park.
- ❖ Reduce the misunderstanding and fighting issues after double park.
- ❖ Make a double park issues can be solve in more effective and efficient way

## **❖ 1.6 Overview**

The purpose for this project is developing the “Double Park Owner Caller With IOT” for people did double park to detect the handwave to call the owner that did double park in more in efficient way. Collect all information people who had double park in Malaysia and get the result. After the product done develop, testing the product on the respondent for 1 month and get the result. Then, do analysis basis on the result and make a chart or graph. If the chart or graph shows positive response, so that, this result is validated.

## **1.7 Outline of Project**

Chapter 1 gave an introduction about the project as well as problem statement, objective and project scope for project.

Chapter 2 is a literature review where the main part of Double Park Owner Caller With IOT will be describes and understanding all components that will be used for this project. The purpose of this chapter is to provide an overview the scope of study for this project.

Chapter 3 is methodology section where the methods or steps that have been used to approach to water monitoring system will be explained thoroughly.

Chapter 4 is the result and discussion where all the result of the analysis will be shown. Discussion and observation of the outcome of the research in relation to evidence obtained from project and theories will be made in this chapter.

Chapter 5 is conclusion for this project, which describe the overall project based on the observation of the result obtained and summarize the entire project. This chapter also discuss the recommendation for future planning.



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Background

**Double parking** means standing or parking a vehicle on the roadway side of a vehicle already stopped, standing or parked at the curb.<sup>[1]</sup> This often prevents some of the vehicles in the first row from departing and always obstructs a traffic lane or bike lane (to the extent of often making the street impassable in one-way single-lane situations). In some areas, people double parking their cars leave the hand brake off, allowing the drivers of the cars next to the curb to push the double parked car a little forward or backward, in order to allow departing from the parking spot. Double parking in this fashion, where illegal, is often punished by ticketing or towing the offending vehicle.

In some urban areas where parking is extremely hard to obtain, courier and delivery services will instruct their drivers that if necessary they may double park anyway, and if ticketed to simply turn it in at the end of their shift. The practice is so common that Washington DC permits companies to establish a monthly billing account for all of their vehicles that receive any parking tickets.

## 2.2 Double park happened in bentong

Tuesday, 14 Aug 2018

12:00 AM MYT



Figure 2.1.1 : double park situation

The STAR Online - NETIZENS on social media are divided over the double-parking road rage incident that happened in Bentong recently. Some feel the action of the pickup truck driver in ramming the car that was blocking his vehicle was justified. Others say that no matter how angry the driver was, he should not have taken the law in his own hands. They also stressed that the owner of the car should be punished for double parking and obstructing another vehicle.

To me, what was very disturbing about the affair was that there were other parking spaces available and there was no reason for the owner of the car to double park. The owner claimed that he had left a name card in his car. But this is absurd because it would be difficult to read the phone number on the card.

My car has been blocked a few times and I have encountered different reactions from the owners of the offending vehicle. On one occasion, I was coming out of a bank when I saw my car, which was parked in front of the building, blocked by another vehicle. I tooted the horn for several minutes but no one responded. Then I walked back into the bank to ask around for the owner but no one spoke up. After 15 minutes, a lady whom I had seen at the customer service counter emerged.

I scolded her for not responding to me earlier but instead of apologising, she angrily said: “Wait for a few minutes, can die *meh*?”

On another occasion, the owner of the car that blocked mine left a note with his name and phone number on the dashboard. The note said “I am sorry for blocking, please call xxxxxxxx.” A young man emerged immediately after I called the number and he apologised before removing his car.

I hope that owners of vehicles will display a note with their phone numbers prominently on their dashboard and respond immediately when they get called (*pic*).

The authorities should restrict parking time in lots in busy areas to 30 minutes between 8am and 5pm. This will ensure that some parking spaces are always available, thus preventing double parking and ugly road rage episodes.

A heavy fine, like RM300, must be imposed on vehicles that exceed the 30-minute parking time. The authorities must also have personnel patrolling these areas to ensure that people comply with the ruling. A heavy fine must be imposed on those who double park and block other drivers in order to deter motorists who have a bad habit of doing this.

Many of my relatives and friends park in front of my gate when they come to visit although there are parking spaces available near my house. On many occasions, I had to ask them to move their cars to allow me to drive into my porch. Sometimes when I get annoyed with the visitors, I would park my car somewhere else, enter my house and either casually acknowledge them or ignore them to show my displeasure. Some have got the message and stopped parking in front of my gate.

As habits are hard to change, stopping illegal parking will be difficult so we hope that the authorities will constantly patrol the busy areas and book those who commit the offence. Tow away the offending cars instead of clamping them. This is because the owner of the car that is blocked will not be able to drive away until the offender pays the fines to remove the clamp from his/her vehicle.

**THOMAS FOO**

**Subang Jaya**

## **2.3 Uni students develop smart system to curb double parking problems**

**By Balqis Lim - July 31, 2017 @ 2:30pm**

**NEW STRAITS TIMES** - DOUBLE parking is a nuisance, especially during peak hours. It is common nowadays to see people leaving their phone numbers on the dashboard or leaving their handbrakes off so that others can push the car if it is blocking one's path.

What if there is a better way? What if we don't need to hear long, ear-piercing honks disturbing everyone's peace?

A team of university students have created ParkKing, a smart outdoor parking system with double parking detection.

Edward Chan Kam Fai, 24, Gan Yi Reng, 24, and Leow Tan Chun Kit, 23, who recently graduated from Universiti Teknologi Malaysia with a Bachelor of Engineering (Electrical and Electronic) degree, have come up with an innovative solution to improve public services in the city.

Gan says the system is not only aimed at the public but also building management and local councils by setting up an integrated information platform with multi-source data that works with devices which turn a particular city problem to a service.

"For city administration, we have an integrated parking lot monitoring and analysis system as well as a smartphone application for officers to give summons.

"The public can check for parking lot availability in real time and also report illegal parking through the platform," he says.

The Smart Parking with Automated Double Park Detection System won the first prize under the Motorola Solutions Track and nailed the Cyberview Design Challenge at the Innovate Malaysia Design Competition 2017 which concluded recently.

The competition was organised by industry leaders — Fusionex, Intel, Keysight, MathWorks, Microsoft, Motorola Solutions, National Instruments, Silterra, and ViTrox — and managed by Dream Catcher Consulting.

Students had to tackle real-world problems with practical engineering solutions through the submission of a proposal paper in the initial stage of the competition.

Shortlisted teams then underwent training and received mentorship from industry experts, while being supplied with state-of-the-art industry technology platforms that could assist them with their prototyping.

The finalists were then selected to take part in the grand finale upon the submission of the participants' final project paper.

Under their adviser, Dr Kamaludin Mohamad Yusof, the prototype of the device only took three months to develop at RM70 per sensor.

With educating the community in mind, Chan says they hope the innovation can help enforcement personnel and districts with perennial parking problems.

## **HOW IT WORKS**

The device/sensor is planted in the ground, which uses magnetic sensor to detect cars nearby.

ParkKing helps drivers locate the nearest available empty parking lot, and even shows how to get there.

Tan says that in the existing solution, the car detector is located at the centre of the parking lot.

“However, ParkKing will have its car detector sensor located 20cm inside from the boundary of the parking lot. This is so that it can detect whether there is an available parking in the lot or there is a car double-parked outside.

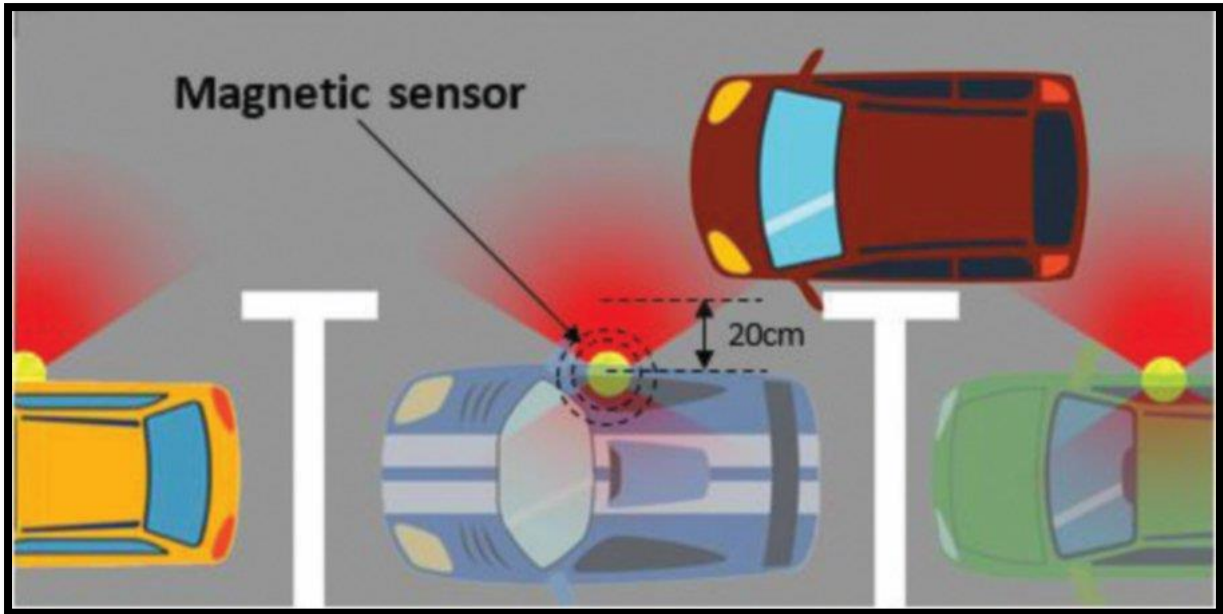


Figure 2.1.2 : The ParkKing device uses a magnetic sensor to help drivers locate the nearest available empty parking lot.

“Next, there is a transceiver gateway installed at the lamp post which can connect up to 20 car detectors at parking lots. When it detects the presence of a car either in the parking lot or double-parked, it will send the data to the control server of the system.”

“For the city council, we will provide an integrated parking monitoring system for them to know the parking status in real time,” adds Chan.

“There is a mobile app that is strictly for the council officer, which serves to receive any illegal parking notification from the server. It can directly lead the officer to that parking lot for summons or call for tow car services,” says Chan.

Kamaludin says the mobile app is unique and differs from other available apps currently in the market.

“Road users or pedestrians can report any illegal parking by using the ParkKing mobile app. If the report is verified, they will receive a reward.

“This motivates the community to participate and thus facilitates two-way communication between road users and the city council,” he says.

The team hopes to further enhance the system with more functions so that the device can be improved for commercial use. They are also looking for investors to fund the project.

## 2.4 Double situation in Klang Valley



Figure 2.1.3 : double park situation at klang valley

**By ACTIONLINE - January 12, 2018 @ 9:09am**

DOUBLE parking in commercial areas in the Klang Valley is the norm.

However, some motorists wish the authorities can resolve the situation by issuing summonses to those who double park.

An executive officer in the Damansara Perdana commercial area, Petaling Jaya, who wants to be identified only as Firdaus, said there was nothing much they could do to stop the problem.

“Some vehicles that are parked properly in parking bays place cones, but nothing can stop others from double parking.

“I believe the cause of the problem is the insufficient number of parking bays in this commercial area. Each shophouse has about 3 floors, each with different businesses.”

Firdaus urged the developer to think of another solution to fix this problem.

“If there is an emergency, those in parking bays would find it hard to get out.”

A resident there, who wants to be identified only as Arman, said there were a lot of eateries in the area.

“From my observation, more vehicles double park at lunch-time, causing congestion in the area.”

He said he hoped the Petaling Jaya City Council (MBPJ) would take action.

## 2.5 Types Of Parking

- Parallel parking

Parallel parking means **parking your car in line with the other cars parallel to the curb**, front bumper to rear bumper. Parallel parking usually occurs on the side of streets where there are no parking facilities, because it leaves enough room for the traffic to pass. Parallel parking is a challenge to some people, because it **requires a certain technique** different than driving right into a parking space:

- Perpendicular parking

Perpendicular car parking means **parking the cars side by side**, perpendicular to a wall, curb or something else. You see this type of parking mostly in parking bays and garages, because you can park many cars on limited space.

- Angle parking

Angle parking is similar to perpendicular parking, except **the cars are aligned in an angle**. Normally the angle is aligned with the direction cars approach the parking space. It makes it a lot easier to drive into the parking space in contrast to perpendicular parking, where the parking space is at a 90 degree angle. With angle parking there is a gentler turn. Not only is it easier to park, but it's also faster and the parking spaces are smaller, making it possible to add more parking spaces in the same size area. Normally you see angle parking inside parking garages and on streets that are wide enough to have room left for the traffic to pass.



- Double parking

Double parking means that **someone has parked their car in a certain way that prevents another car from departing**. Double parking can happen in different situation:

#### ❖ **Double parking on-street**

This type of double parking is illegal and you can get fined for it. Double parking on-street means that you park your car parallel to a car that is parked next to the curb. Double parking in this situation means that the car parked next to the curb cannot depart because it is blocked by your car, and often your car also blocks the traffic flow. Unfortunately, double parking on-street is quite common in larger cities. Sometimes the people who double park their car even leave the hand break off so that people can push their car forward or backwards a bit if it blocks them.

#### ❖ **Double parking in parking garages with attendees**

In this situation, double parking is used to be able to park as many cars as possible in the parking garages. It's a different situation than on-street, because in this situation the cars are parked by attendees (or valets). The attendee holds on to the keys of all cars. If one needs to get out and it's block by another car, the attendee simply brings the keys to both cars and moves the car that blocks the other.

#### ❖ **Parking on more than one parking space**

The term “double parking” is sometimes also used to indicate the situation where a car parks over the lines that separate the parking spaces and therefor taking more than one parking space.

## **2.6 Things to do when double park**

- ❖ Be close at hand, within sight of your car

Make sure you are close at hand, and within sight of your car, and keep an eye on it so that you can move your car if required.

- ❖ **Leave a note**

If you cannot be within sight, leave a note on your car with your hand phone number on your car. This way, the people you are blocking can call you.

- ❖ **Keep your car in Neutral and leave the handbrake OFF**

Leave your car in NEUTRAL gear, and have your handbrake/Parking brake OFF. The idea here is to allow others to push your car aside to allow another car to get out of a parking slot. Make sure though, that there is sufficient space for your car to move, and ensure that your steering is pointed in the correct position/direction of travel, and of course, that the ground in front and behind your car is level you do not want to see your car careen down a slope and hit something. I have actually seen this practiced in a corporate parking lot that was very crowded, and it works.

## 2.7 Different Type Of Sensors

The following is a list of different types of sensors that are commonly used in various applications. All these sensors are used for measuring one of the physical properties like Temperature, Resistance, Capacitance, Conduction, Heat Transfer etc.

- Temperature Sensor
- Proximity Sensor
- Accelerometer
- IR Sensor (Infrared Sensor)
- Pressure Sensor
- Light Sensor
- Laser Sensor
- Ultrasonic Sensor
- Smoke, Gas and Alcohol Sensor
- Touch Sensor
- Colour Sensor
- Humidity Sensor
- Tilt Sensor
- Flow and Level Sensor

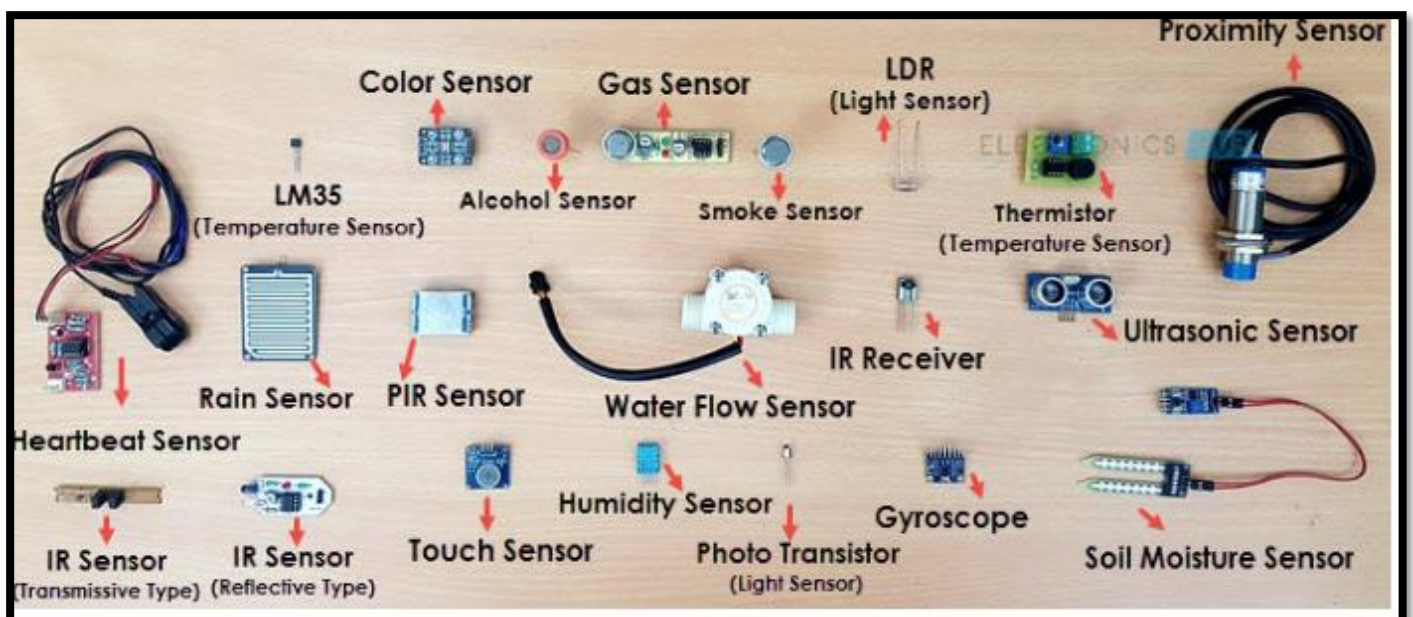


Figure 2.4 : Some types of Sensor.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 Background**

The methodology is the method or procedures used for carrying out project in more specific. These methods are very important to ensure the completion of the project. The methods that are used including the project planning flow chart and collecting data Components.

In this study, the information of Double Park Owner Caller With IOT has been collected according to the method through various kinds of journal, books and internet which is related to the project. This information has been used in developing the and complete Double Park Owner Caller with IOT final report appropriately

#### **3.2 Planning of Project Double Park Owner Caller With IOT**

In ensuring the Double Park Owner Caller With IOT development can be done appropriately, a project planning by using a Gantt charts has been prepared. In this Gantt chart, schedule of plan and subsequently report progress within the project environment has been stated clearly. Initially, in this project, the scope is defined with the appropriate methods for completing the project are determined.

### 3.2.1 GANTT CHART

This Gantt charts are used in this Double Park Owner Caller With IOT project to illustrate the start and finish dates of the terminal elements and summary elements of a project. A Gantt chart is used for project management, it is the most popular and useful ways of showing activities, task or events displayed against time. This Gantt chart has shown the task that need to be completed within the dateline. Every task need to mark on which number of week the task done will.

Table 3.2.1.1and 3.2.1.2 shows a Gantt chart for two semesters which is semester 4 and semester 5. It shows the activities need to do every week. In the table, for the pink color for planning and the yellow color is when the activities has been do. As can see in semester 4 there are seven activities need to do in 15 weeks while in semester 5 it has seven activities in 15 weeks. In semester 5 more focus in build the PIPR project while in semester 4 it more to planning and design the Blindness Shoes project. There are few activities that had been done in the planning date and few activities are not. From this Gantt chart, it make every student to be more punctual in time when doing the work.

**Table 3.2.1.1 : Gantt Chart Semester 4**

<b>WEEK/ ACTIVITY</b>	<b>LW 1</b>	<b>LW 2</b>	<b>LW 3</b>	<b>LW 4</b>	<b>LW 5</b>	<b>LW 6</b>	<b>LW 7</b>	<b>LW 8</b>	<b>LW 9</b>	<b>LW 10</b>	<b>LW 11</b>	<b>LW 12</b>	<b>LW 13</b>	<b>LW 14</b>	<b>LW 15</b>
PROJECT	█	█													
BRIEFING	█	█													
GROUP	█	█													
FORMATION		█													
SUBMISSION OF		█	█												
PROJECT TITLE			█												
PROPOSED PAPER			█	█	█										
PREPARATION				█	█										
PRESENTATION						█	█								
						█	█								
PROGRES OF							█	█	█	█	█	█			
THE PROJECT							█	█	█	█	█	█			
REPORT												█	█	█	
												█	█	█	
PRESENTATION AND SUBMISSION PROJECT														█	█
														█	█

**Table 3.2.1.2 : Gantt Chart Semester 5**

<b>WEEK/ ACTIVITY</b>	<b>LW 1</b>	<b>LW 2</b>	<b>LW 3</b>	<b>LW 4</b>	<b>LW 5</b>	<b>LW 6</b>	<b>LW 7</b>	<b>LW 8</b>	<b>LW 9</b>	<b>LW 10</b>	<b>LW 11</b>	<b>LW 12</b>	<b>LW 13</b>	<b>LW 14</b>
DISCUSSION AND GUIDANCE														
BUILD THE MODEL														
TESTING AND TROUBLESHOOTING														
IMPROVING THE PROJECT														
PROJECT PRESENTATION														
SUBMIT LOG BOOK														
SUBMIT FINAL REPORT														

### 3.2.2 SURVEY AND INVESTIGATION

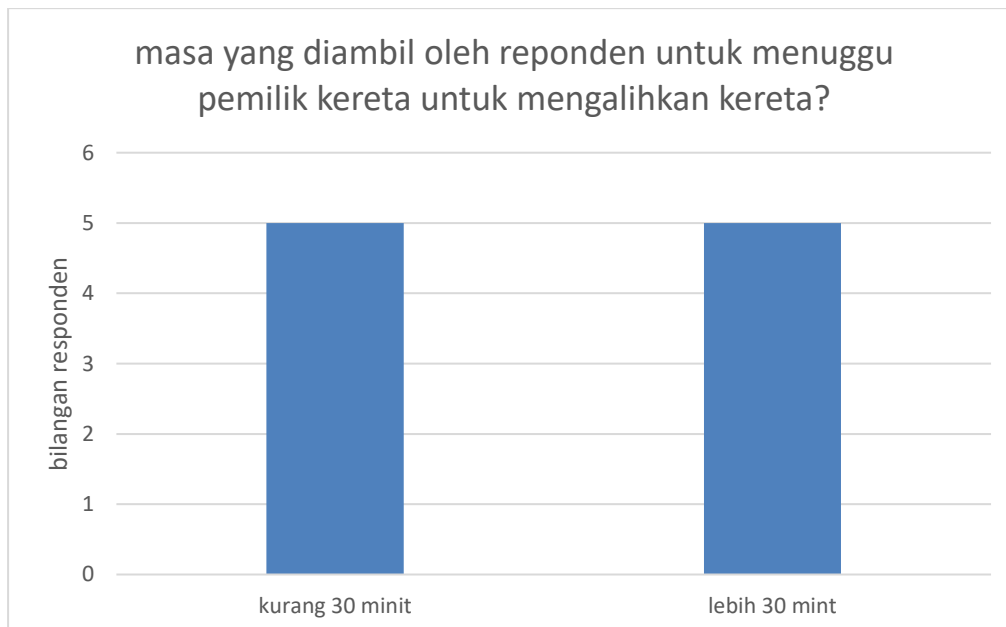
#### RESULT (BEFORE DEVELOPMENT)

**Q1** : Adakah ada pernah menghadapi masalah “double park” ?



70% of our respondent had double park

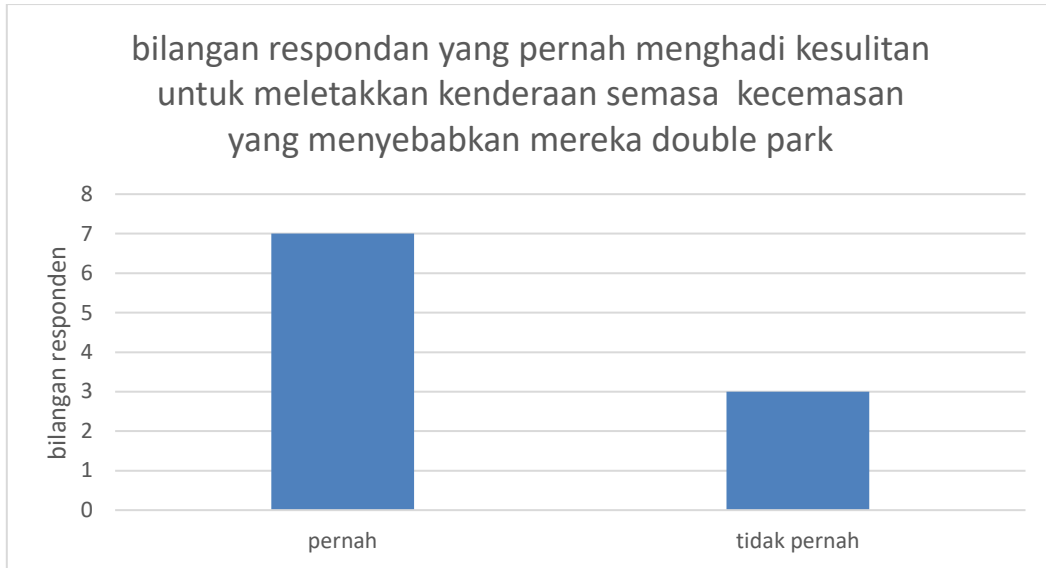
**Q2** : Berapa lama anda mengambil masa untuk menunggu pemilik kereta untuk mengalihkan kereta?



Half of our respondent take less than 30 minutes to wait owner to come back and the other half wait more than 30 minutes.

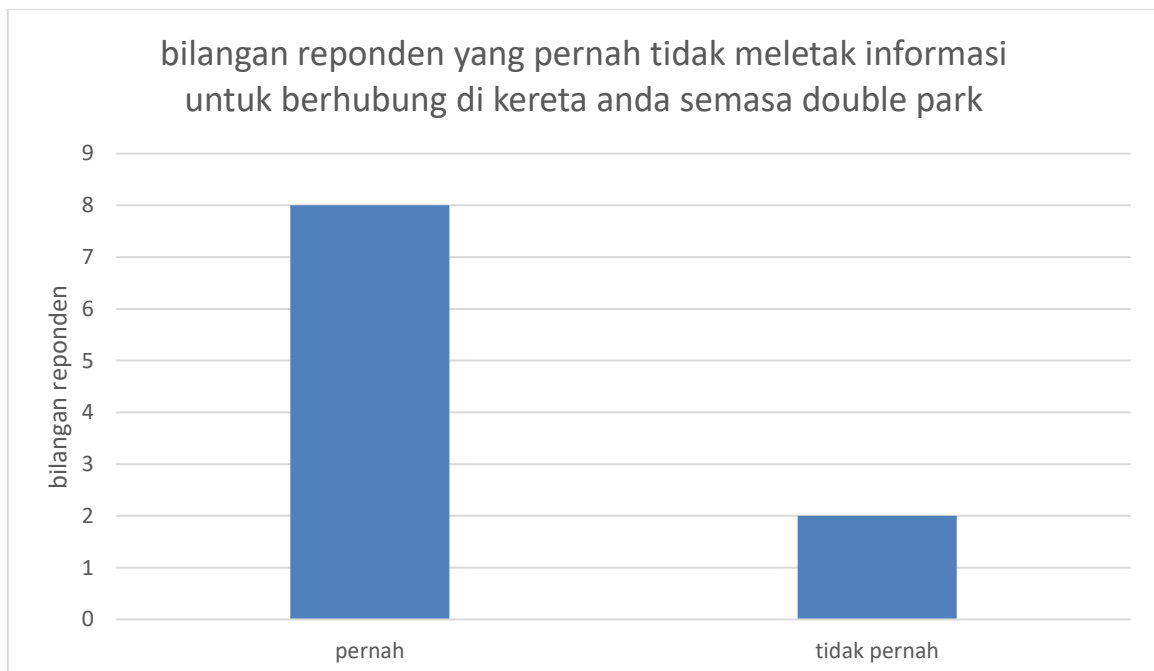


**Q3** : Adakah anda pernah menghadapi situasi kecemasan yang menyebabkan anda terpaksa “double park” kerana tempat parking terlalu penuh (seperti menghantar pesakit ke klinik ataupun melawat pesakit tenat di hospital)?



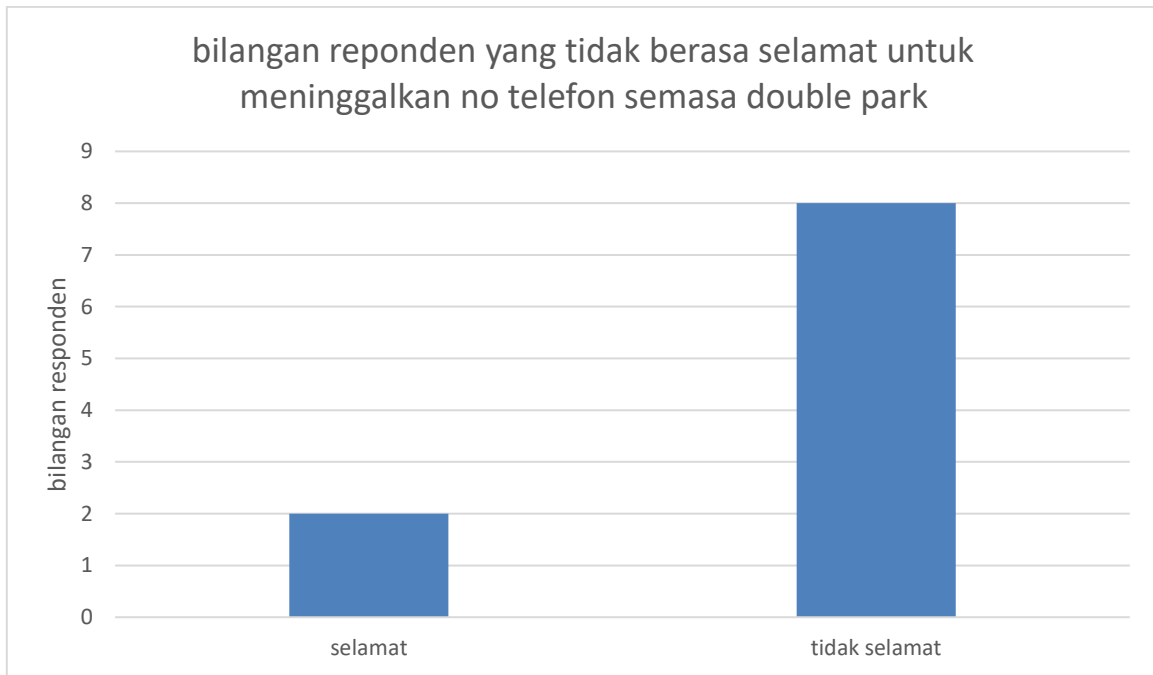
70% of our respondent agree that they have to double park in emergency situation

**Q4** : Adakah pernah terlupa meletak informasi untuk berhubung di kereta anda semasa “double park”?



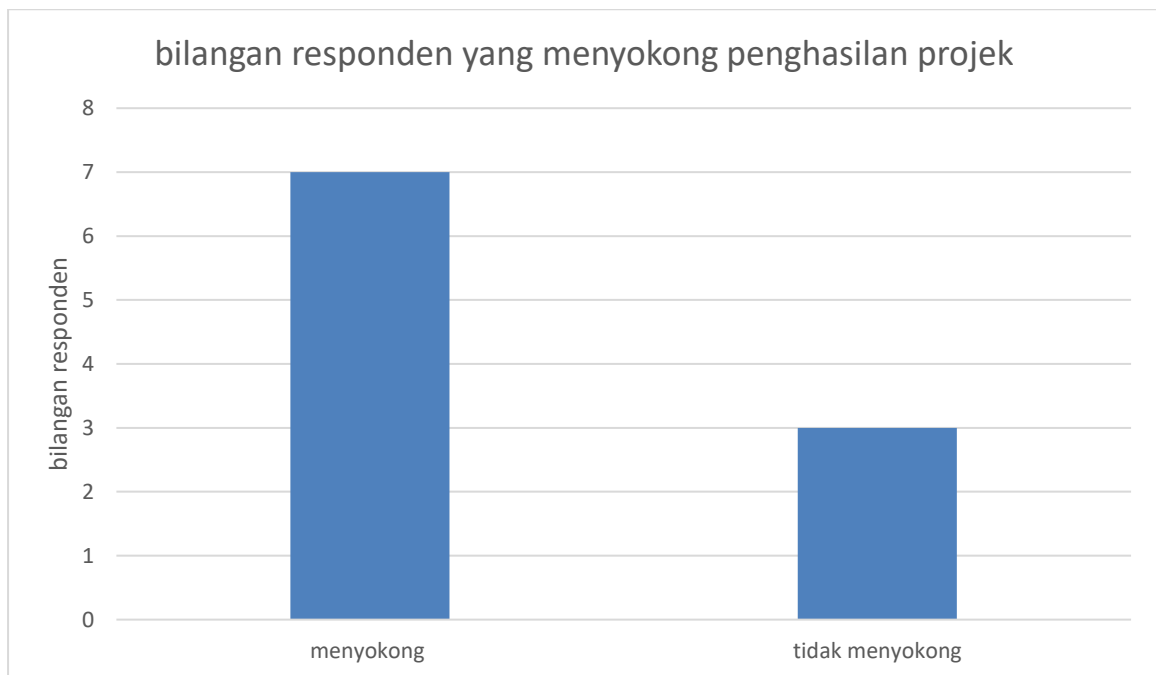
80% of our respondent agree that they forgot to leave any notes as a contact when the other owner want to came out from their parking space

**Q5** : Adakah anda berasa selamat untuk meniggalkan nombor telefon anda di semasa “double park” ?



80% of our respondent agree that them felt not safe to leave their phone number when double park

**Q6** : Adakah anda menyokong pengasilan produk untuk memudahkan pihak pelaku dan pihak penerima double park ini untuk menerima dan menghantar isyarat dengan cara yang lebih selamat ,berkesan dan cekap dengan kos yang rendah?



70% of our respondent agree of our ideas to develop the device double park owner caller.

## RESULT (AFTER DEVELOPMENT)

Q1: Adakah produk tersebut berfungsi dengan baik selama sebulan?



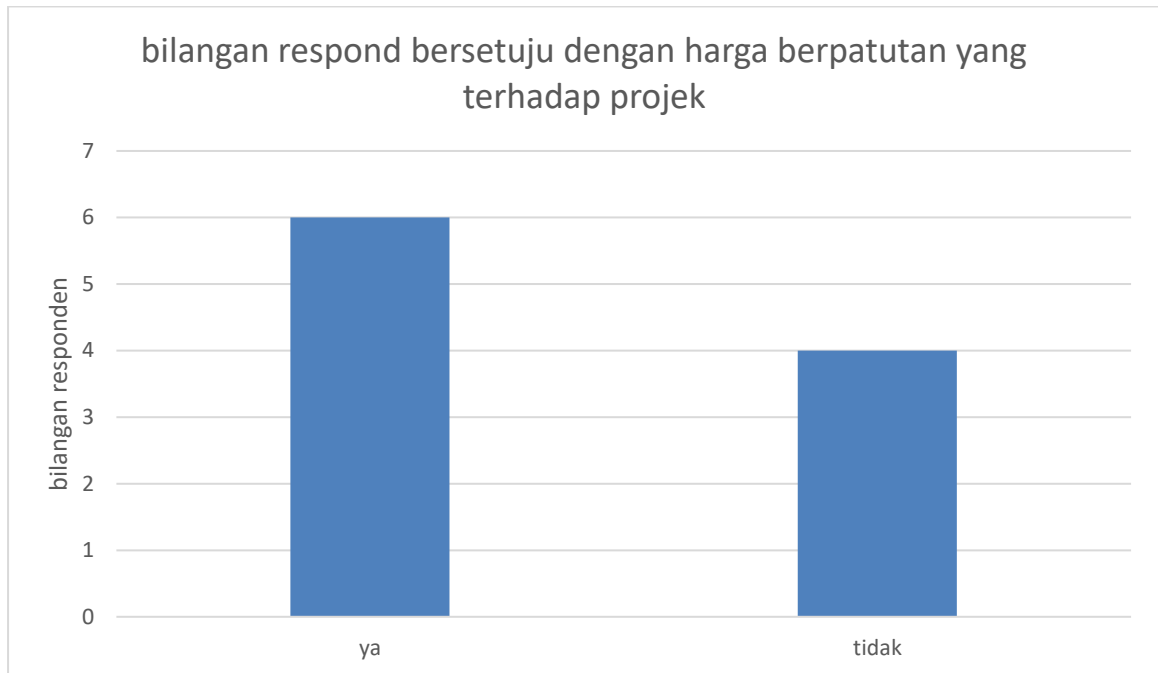
70 % of our respondent feel good with our project

Q2: adakah product tersebut dapat membantu memudahkan anda untuk menerima isyarat untuk mengalihkan kenderaan anda ketika anda “double park” ?



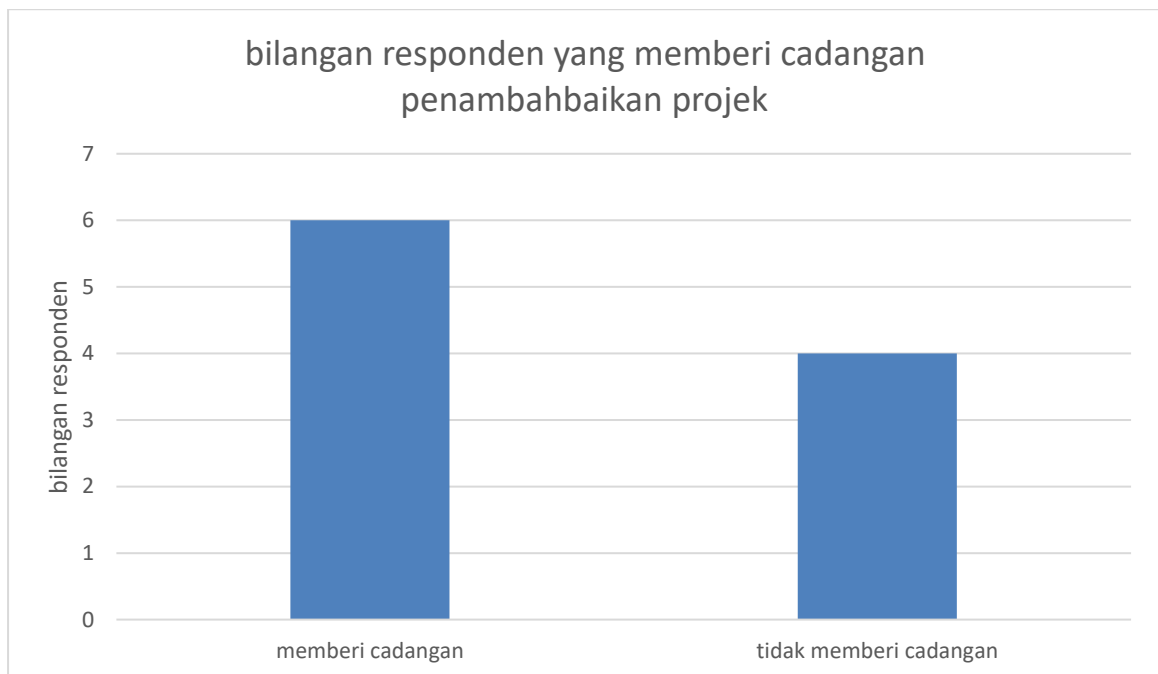
70% of our respondent agree that our project to to solve the problem calling the owner in more effective way

Q3: adakah harga produk tersebut berpatutan dengan cara produk tersebut berfungsi dan beroperasi ?



60 % of our respondent agree that the price it affordable and reasonable

Q4: apakah cadangan anda untuk penambahbaikan projek ini untuk ia dapat berfungsi dengan lebih sempurna



60% of our respondent give a comment about our project

### **3.3 Flowchart in Double Park Owner Caller With IOT**

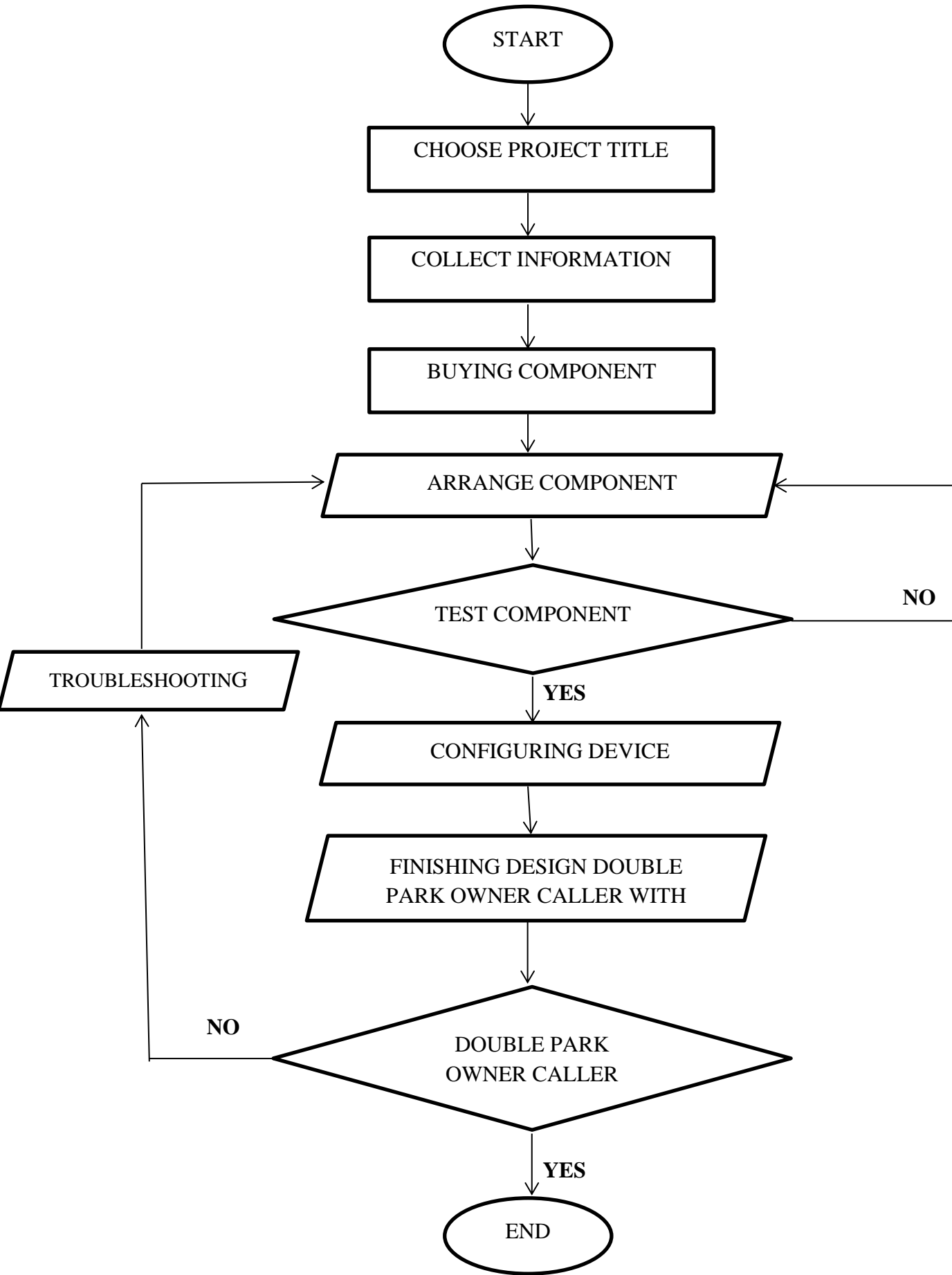
Planning flow chart is an important elements in developed double park owner caller with IOT. It may be included of sequence of actions, materials or services entering or leaving the process (inputs and outputs), decisions that must be made, people who become involved, time involved at each step and/or process measurements.

The process described can be a manufacturing process, an administrative or service process and a project plan. This is a generic tool that can be adapted for a wide variety of purposes. This flowchart consist of the flow for overall of Blindness Shoes

#### **3.3.1 Overall Flowchart**

The overall flowcharts state the flow of making the Double Park Owner Caller With IOT. The flowchart consists of from the starting ideas to choose the main project until the finishing of Double Park Owner Caller With IOT. Several test had been done from assembling the components until finishing the project. The main purpose is to test the components or to avoid short circuit when running the Blindness Shoes. The Double Park Owner Caller With IOT had been tested. While tested there is some unwanted problem occur. The problem needs to overcome by troubleshooting and fix the problem.

The flowchart can be adapted when configure the device as Double Park Owner Caller With IOT using the arduino that need to be configure. The process described can be a manufacturing process, an administrative or service process and a project plan. This is a generic tool that can be adapted for a wide variety of purposes. This flowchart consist of the flow for overall of Double Park Owner Caller With IOT.



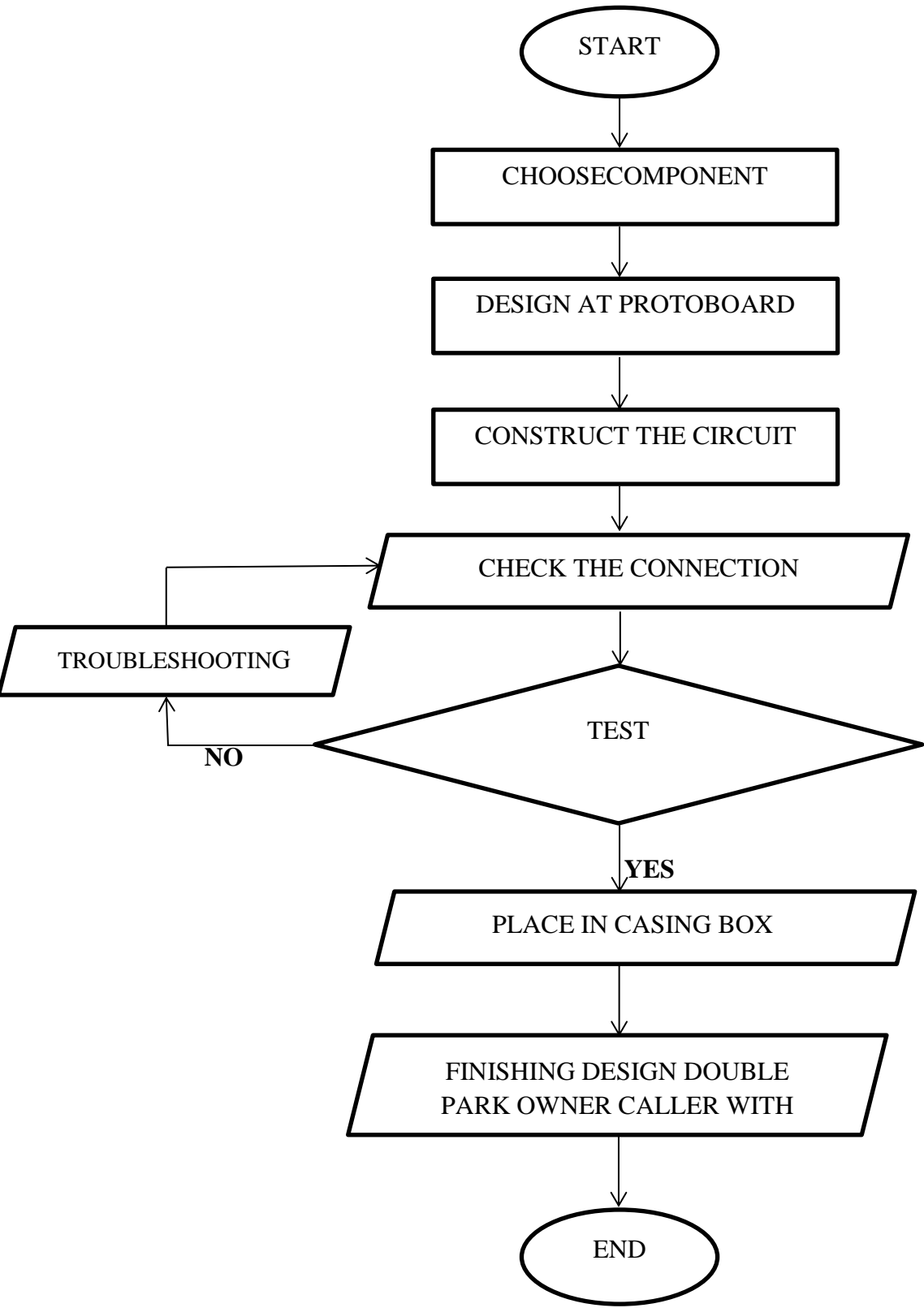
**Figure 3.3.1:** Overall Flowchart

Figure 3.3.1 shows the overall flowchart of Double Park Owner Caller With IOT project. First step is choosing a project title. Then collect information and start buying a component. After arrange the component. Test the functionality of the component. If the component is failed when test it, buy or test another component. If all the component are functionality, go to next step which is configuring device and finishing design the Double Park Owner Caller With IOT. After finishing, do again test for Double Park Owner Caller With IOT. If there are no failed no need to do troubleshooting. If there are failed, the Double Park Owner Caller With IOT need to do some troubleshooting.

### **3.3.2 Circuit Flowchart**

This flowchart is to determine the flow when making the circuit. There are several steps that need to be done before running the circuit. The circuit mainly needed to run the Blindness Shoes

Figure 3.3.2 shows a circuit flowchart. First of all must start with choose a software to make a circuit for Double Park Owner Caller With IOT. Then after finish doing a circuit, make a pcb layout. Next do a uv process on pcb and then etching it to trace the route. After finish an etching process, check the connection whether it true or not. If yes, proceed to next step which is drilling and soldering the component. If not must go back to previous step which is etching process. After done drilling and soldering process, go to next step which is configuring circuit and test the circuit. If the circuit failed, do a troubleshooting. If the connection is good, so can start to do the Double Park Owner Caller With IOT project.



**Figure 3.3.2:** Circuit Flowchart



### 3.4 Block Diagram

A block diagram is a diagram of a system for Double Park Owner Caller With IOT in which the principal parts or functions are represented by blocks connected by lines. It shows the relationships of each block. They are heavily used in engineering in hardware design, electronic design, software design, and process.

Block diagrams are used for higher level, less detailed descriptions that are intended to clarify overall concepts without concern for the details of implementation. Contrast this with the schematic diagrams and layout diagrams used in electrical engineering, which show the implementation details of Double Park Owner Caller With IOT components and Double Park Owner Caller With IOT physical construction.

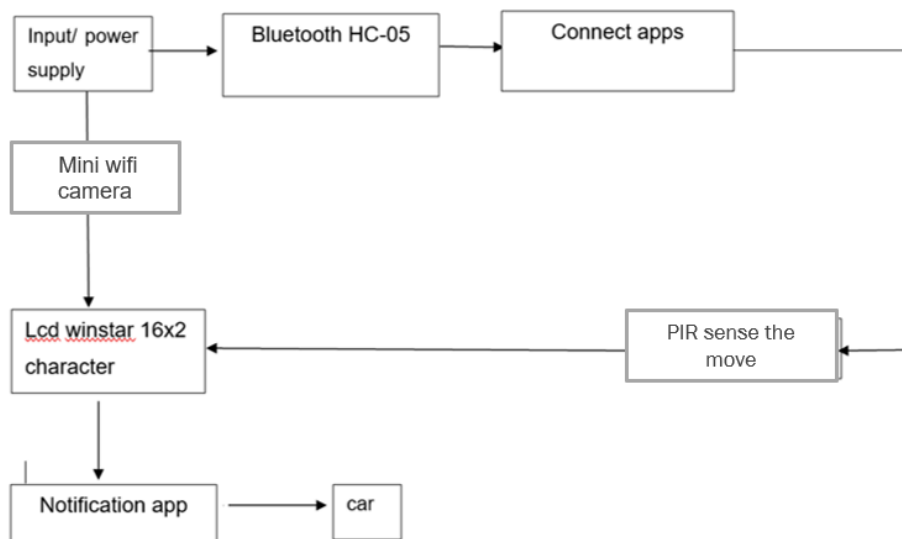


Figure 3.4 : Block diagram of Double Park Owner Caller With IOT

Figure 3.4 shows a diagram Double Park Owner Caller With IOT. From the input 5V it sperate with 4 compenent which is Bluetooth HC-05 , Mini wifi Camera, Lcd Winstar 16x2 and PIR sensor. When the Bluetooth is on the device can be connect to the phone. Next, LCD will display information “wave your hand here”. Then PIR send the move and give the information to Arduino. Arduino give the information to app through Bluetooth. After that, Lcd will display “the owner has been called”. Next the app will give notification and alarm sound. Lastly the car moved by the owner.

### 3.5 Circuit Diagram

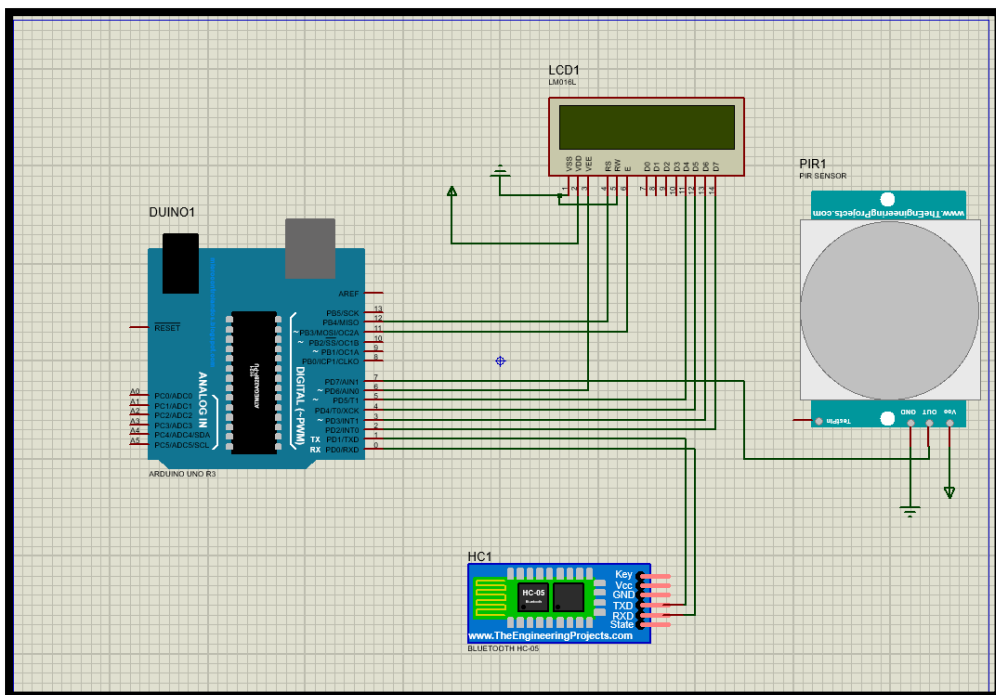


Figure 3.5 : Circuit diagram

### 3.6 Schematic Layout

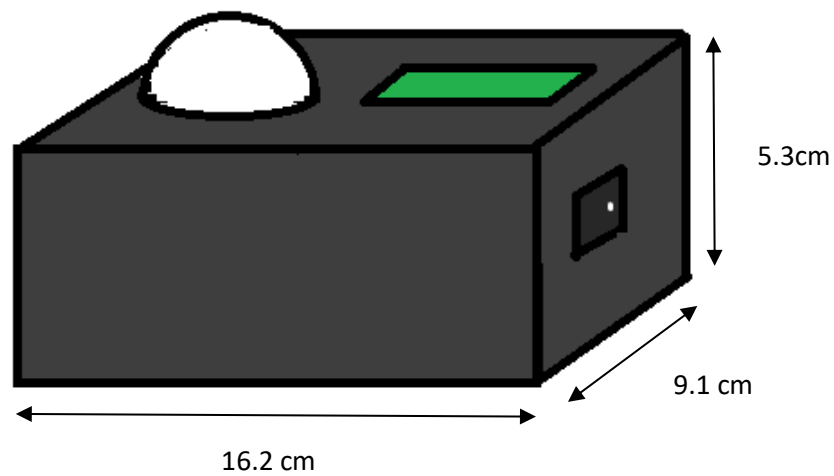


Figure 3.6.1 : Hardware view from front

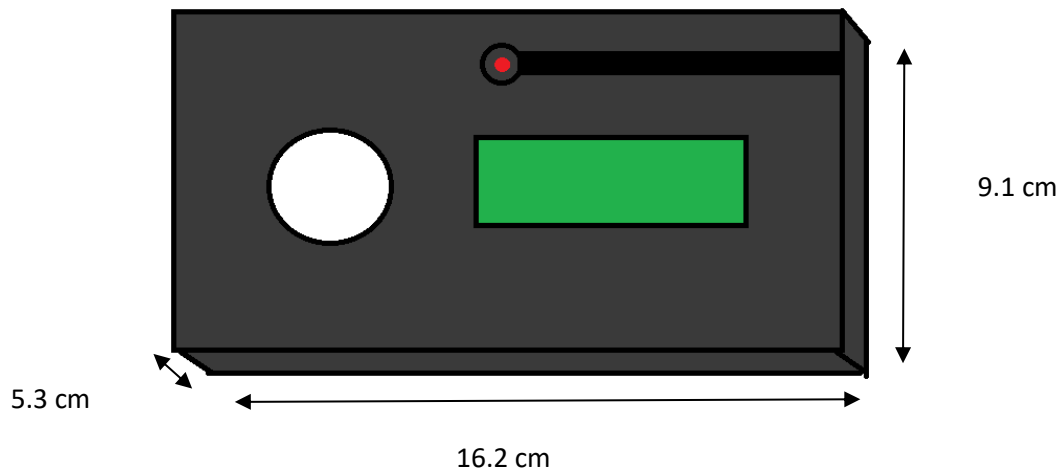


Figure 3.6.2 : Hardware view from top

## 3.7 Collecting Data Component

### 3.7.1 Passive Infrared Sensor (PIR)

After that we use Passive Infrared Sensor. A **passive infrared sensor (PIR sensor)** is an electronic sensor that measures infrared (IR) light radiating from objects in its field of view. They are most often used in PIR-based motion detectors. PIR sensors are commonly used in security alarms and automatic lighting applications. PIR sensors detect general movement, but do not give information on who or what moved. For that purpose, an active IR sensor is required. PIR sensors are commonly called simply "PIR", or sometimes "PID", for "passive infrared detector". The term *passive* refers to the fact that PIR devices do not radiate energy for detection purposes. They work entirely by detecting infrared radiation (radiant heat) emitted by or reflected from objects.



Figure 3.7.1 : Pasiive Infrared Sensor

### 3.7.2 ARDUINO UNO

Firstly, we use the microcontroller that called Arduino UNO. The Arduino UNO is an open-source microcontroller board based on the Microchip ATmega328P microcontroller and developed by Arduino.cc. The board is equipped with sets of digital and analog input/output (I/O) pins that may be interfaced to various expansion boards (shields) and other circuits. The board has 14 Digital pins, 6 Analog pins, and programmable with the Arduino IDE (Integrated Development Environment) via a type B USB cable. It can be powered by a USB cable or by an external 9 volt battery, though it accepts voltages between 7 and 20 volts. It is also similar to the Arduino Nano and Leonardo.

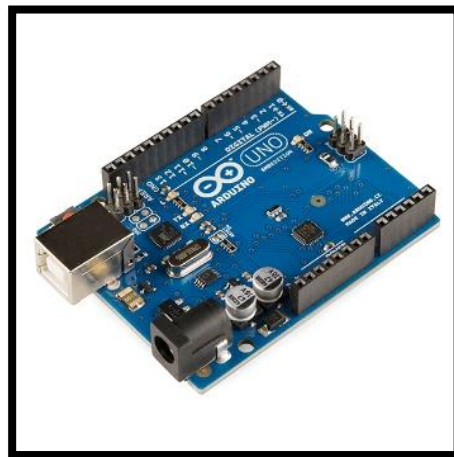


Figure 3.7.2 : Arduino UNO

### 3.7.3 Bluetooth HC05

Next we use bluetooth HC-05 . HC-05 module is an easy to use Bluetooth SPP (Serial Port Protocol) module,designed for transparent wireless serial connection setup.The HC-05 Bluetooth Module can be used in a Master or Slave configuration, making it a great solution for wireless communication.This serial port bluetooth module is fully qualified Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps Modulation with complete 2.4GHz radio transceiver and baseband. It uses CSR Bluecore 04-External single chip Bluetooth system with CMOS technology and with AFH (Adaptive Frequency Hopping Feature).

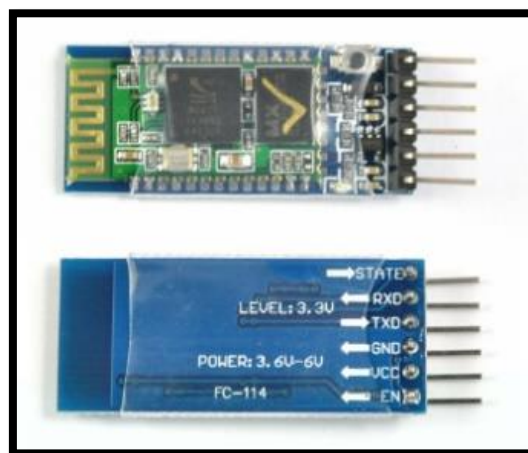
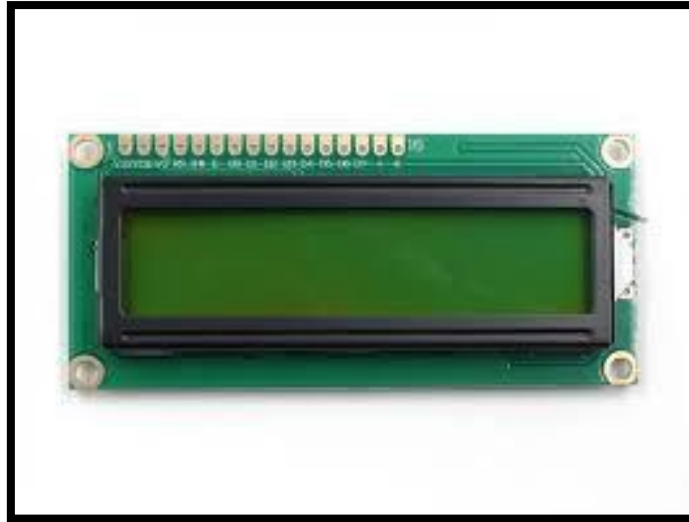


Figure 3.7.3 : Bluetooth HC-05

### 3.7.4 Character LCD Display WH1602W

After that, we use LCD 16x2 .Winstar 16x2 Character LCD Display WH1602W is having two pinout interfaces on upper and bottom sides of the LCD module. This 16x2 lcd display has the outline size of 80.0 x 36.0 mm and VA size of 66.0 x 16.0 mm and the maximum thickness is 13.2 mm. WH1602W 16x2 LCD Displays are built-in controller ST7066 or equivalent. It is optional for + 5.0 V or + 3.0 V power supply. The LEDs can be driven by pin 1, pin 2, or pin 15 pin 16 or A/K. This type of module can be operating at temperatures from - 20°C to +70°C; its storage temperatures range from -30°C to +80°C.



**Figure 3.7.4 : Character LCD Display WH1602W**

### **3.7.5 Mini wifi camera**



**Figure 3.7.5 : Mini wifi camera**

#### **Description:**

Powered by built in rechargeable battery which last about 45 minutes.

Automatic monitoring video recording(with voice) when you open the camera.

This mini camera can work anytime and anywhere.

It is compatible with iOS or Andriod operation system.

**Specifications:**

Material: ABS

Video Format: AVI

Video Coding: M-JPEG

Video Resolution: 640\*480 VGA

Network Transmission Resolution Ratio: 320x240 QVGA

Video Frame Rate: 10fps±1fps

Camera Sensor: 1/3" CMOS

Antenna: Built-in 2.4G 802.11n WIFI Antenna

External Memory: Support TF card up to 32GB(Card not included)

Player: Operating System Built-in or Main Stream Player

Image Proportion: 4:3

Charge Voltage: DC 5V

Chart Port: USB Mini 5Pin

Battery Type: High Power Polymer Lithium

Support System: for Windows,iOS,Android

# CHAPTER 4

## ANALYSIS AND RESULT

### 4.1 Analysis of Project

After we done the process of designed and programmed the Double Park Owner Caller With IOT, this product was test functionally and successfully. First, we test all the function of component that we use. We also checked the connection of Bluetooth between the device and the phone . After that, we checked the connection with wifi camera and their quality video. Add, we also test how far the PIR sensor can sens. From that we know This Double Park Owner Caller With IOT was functioning well. Furthermore, we also had chance to show our project to the society to test our project to get some advice and comment. The result of analysis is in table below.

#### ANALYSIS OF BLUETOOTH CONNECTION

Table 4.1.1 : analysis of bluetooth connection

Distance (m)	Connection with device	
	With obstacle	Without obstacle
4	Good	Good
8	Good	Good
12	Good	Good
16	Good	Low
18	Low	Low
20	Low	Lost connection
22	Lost connection	Lost connection



## ANALYSIS OF WIFI CAMERA CONNECTION AND VIDEO QUALITY

**Table 4.1.2 :** analysis of wifi camera connection and video quality

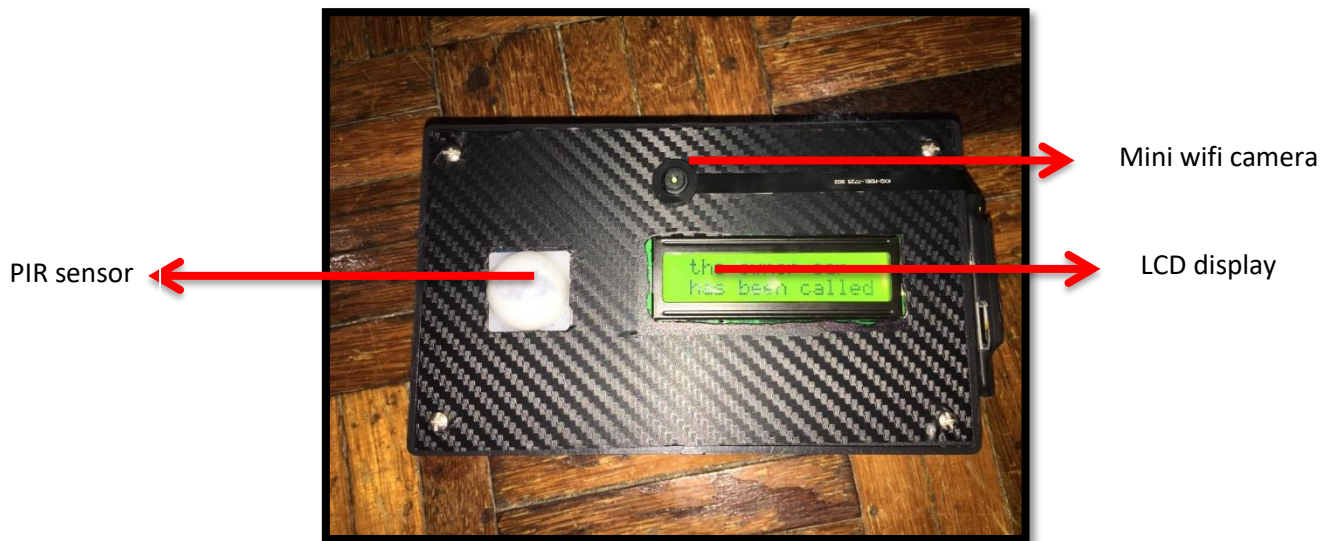
Distance (m)	Connection with device		Quality of video	
	With obstacle	Without obstacle	With obstacle	Without obstacle
4	Good	Good	perfect	perfect
8	Good	Good	Good	Good
12	Good	Low	Good	Good
16	Low	Low	Low	Low
18	Low	Low	Low	Bad
20	Low	Lost connection	Bad	Lost connection
22	Lost connection	Lost connection	Lost connection	Lost connection

## ANALYSIS OF PIR SENSOR

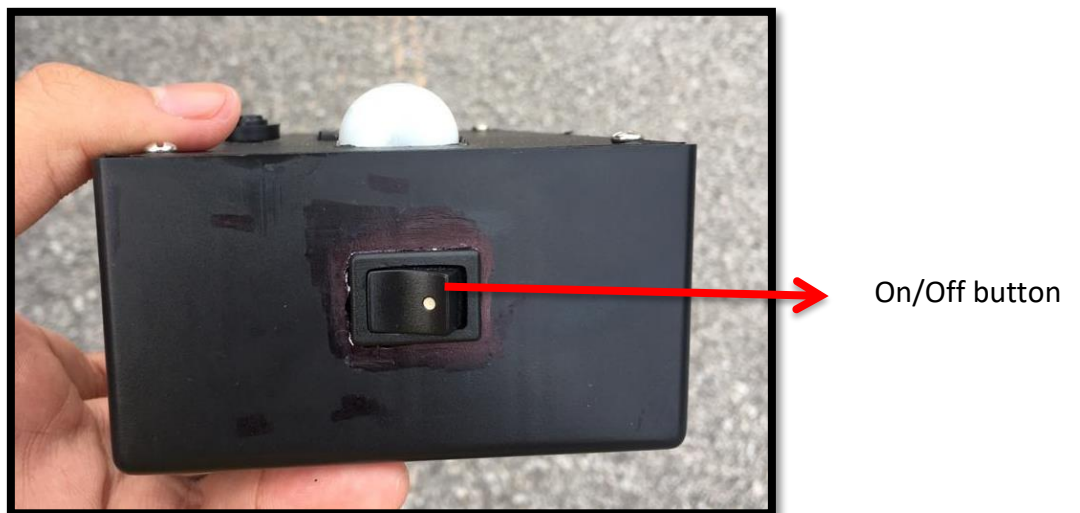
**Table 4.1.3 :** Analysis of pir sensor

Distance (cm)	Sensing of PIR sensor
20	Good
40	Good
60	Good
80	Low
100	None
120	None

## 4.2 Layout Specification

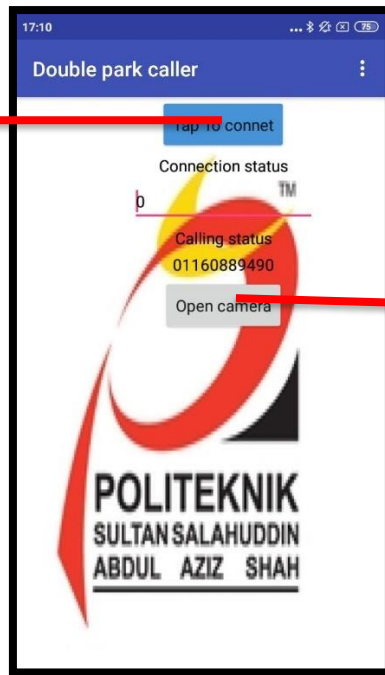


**Figure 4.2.1 :** Top view of Double Park Owner Caller With IOT



**Figure 4.2.2 :** side view of Double Owner Caller With

To connect  
bluetooth



To use camera

**Figure 4.2.3 :** View Of App in phone

## 4.3 Survey Result and Analysis



### DOUBLE PARK OWNER CALLER WITH IOT QUESTIONNAIRE

We are students from Politeknik Sultan Salahuddin Abdul Aziz Shah. The purpose of this questionnaire is to gather information related to my final year project which is Double park Owner caller with IOT . This project is develop to solve the double parking issue with low cost installation and also to develop app and system that easy to use and understand to solve the double parking issue in efficient way on emergency situation. We would be glad if sir/madam would spend some time to answer the questionnaire. Please read all the questions carefully, Your responses. Thank you.

Kami adalah pelajar Politeknik Sultan Salahuddin Abdul Aziz Shah. Tujuan soal selidik ini adalah untuk mengumpul maklumat yang berkaitan dengan projek akhir tahun saya iaitu pemanggil pemilik “double park” dengan IOT. Projek ini bertujuan untuk membantu menyelesaikan masalah “double park” dengan kos pemasangan yang rendah dan untk membina sistem aplikasi yang senang digunakan untuk menyelesaikan masalah “double park” dengan lebih cekap . Kami akan gembira jika tuan / puan akan meluangkan masa untuk menjawab soal selidik. Sila baca semua soalan dengan teliti, Jawapan anda. Terima kasih

### DEMOGRAPHHY

GENDER / JANTINA : MALE (LELAKI) / FEMALE (WANITA)

AGE / UMUR :

1. Adakah produk tersebut berfungsi dengan baik selama sebulan?

Yes

no

2. Adakah product tersebut dapat membantu memudahkan anda untuk menerima isyarat untuk mengalihkan kenderaan anda ketika anda "double park" ?

YA

TIDAK

3. Adakah harga produk tersebut berpatutan dengan cara produk tersebut berfungsi dan beroperasi ?

Ya

tidak

4. Apakah cadangan anda untuk penambahbaikan projek ini untuk ia dapat berfungsi dengan lebih sempurna
-

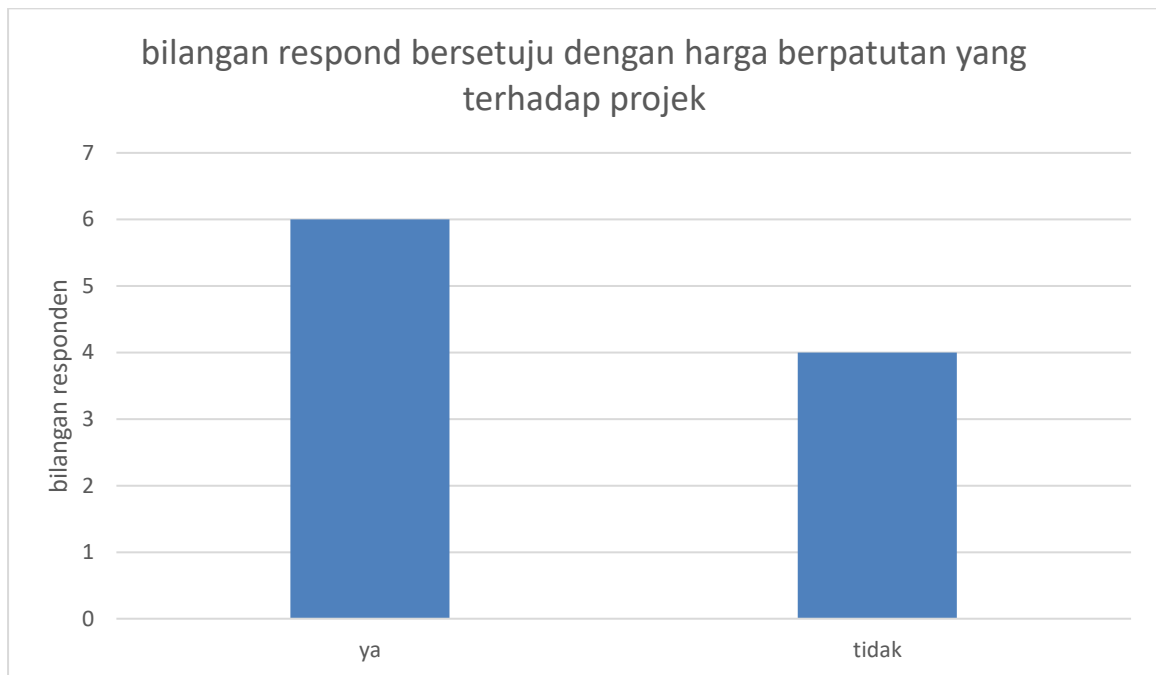
Q1: Adakah produk tersebut berfungsi dengan baik selama sebulan?



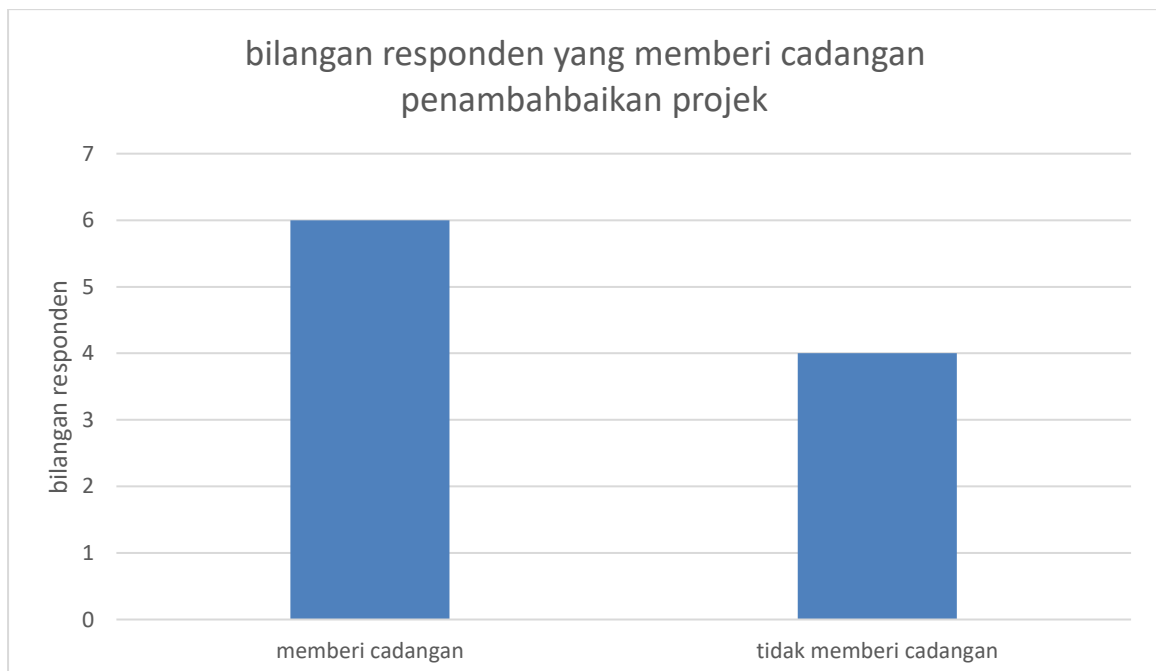
Q2: adakah product tersebut dapat membantu memudahkan anda untuk menerima isyarat untuk mengalihkan kenderaan anda ketika anda "double park" ?



Q3: adakah harga produk tersebut berpatutan dengan cara produk tersebut berfungsi dan beroperasi ?



Q4: apakah cadangan anda untuk penambahbaikan projek ini untuk ia dapat berfungsi dengan lebih sempurna



#### 4.4 Picture evidence of responden



NAMA: ABDUL KASIMBIN YAHYA

UMUR: 45 TAHUN

STATUS: SUDAH BERKAHWIN

PEKERJAAN: JURUTERA

RESPOND: PRODUK INI BAGUS DAN BOLEH  
KETENGAHKAN DALAM PASARAN



NAMA: WAN JAMIL BIN KHADIR

UMUR : 26 TAHUN

STATUS : SUDAH BERKAHWIN

PEKERJAAN : USHAWAN

RESPOND : PRODUK INI ADALAH  
SATU INOVASI YANG BAIK





NAMA: AHMAD KHUSAINI BIN SAMAD ALI

UMUR : 25 TAHUN

STATUS: BUJANG

PEKERJAAN : KERJA PEJABAT

## CHAPTER 5

### CONCLUSION AND RECOMMENDATIONS

#### 5.1 Conclusion

During the process to develop the smart double park owner caller we faced a lot of problems . The problem that we faced was firstly we have use the button to call the owner but the problem was we cant put the push button outside the car with connected to the device in the car. We already do some research and also please of advice to people around us such a lecturer and our parent . After that we finally relies that we need to use the sensor can detect the movement from the outside the car with the device still in the car. So we use the PIR sensor to detect the hwand form outside of the car will device still inside the car. In addition , we also have also use many sensor to solve the problem . We do some research about it and we add the sensor to make the process smooth . From the process also , we learnt a lot of thing . we learn so many knowledge out of our scope that do not have in the text book . We also learnt how to solve the problem with research , please of advice to people who know detail about it , find the book in the library and more . Lastly , this smart double park owner caller is really suitable to all car user because it can help people to solve the problem went the parking is full in the emergency situstion for example at hospital . This device used a lot of latest technology and this machine will not be marketable because this is a new renovation from us . But the device still can enhance buy use high technology and with use more cost to develop it in a more perfect way.

## **5.2 Recommendation**

As a suggestion, we hope this product can be improved by use the hand wave sensor to get a better sensing. Also it can use the rechargeable battery to make it more easy to charge without buying new battery. It also can use wifi to make it can connect in long range.

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# **APPENDICES**

## APPENDIX A – QUESTIONNAIRE



### DOUBLE PARK OWNER CALLER WITH IOT QUESTIONNAIRE

We are students from Politeknik Sultan Salahuddin Abdul Aziz Shah. The purpose of this questionnaire is to gather information related to my final year project which is Double park Owner caller with IOT . This project is develop to solve the double parking issue with low cost installation and also to develop app and system that easy to use and understand to solve the double parking issue in efficient way on emergency situation. We would be glad if sir/madam would spend some time to answer the questionnaire. Please read all the questions carefully, Your responses. Thank you.

Kami adalah pelajar Politeknik Sultan Salahuddin Abdul Aziz Shah. Tujuan soal selidik ini adalah untuk mengumpul maklumat yang berkaitan dengan projek akhir tahun saya iaitu pemanggil pemilik “double park” dengan IOT. Projek ini bertujuan untuk membantu menyelesaikan masalah “double park” dengan kos pemasangan yang rendah dan untk membina sistem aplikasi yang senang digunakan untuk menyelesaikan masalah “double park” dengan lebih cekap . Kami akan gembira jika tuan / puan akan meluangkan masa untuk menjawab soal selidik. Sila baca semua soalan dengan teliti, Jawapan anda. Terima kasih

### DEMOGRAPHHY

GENDER / JANTINA : MALE (LELAKI) / FEMALE (WANITA)

AGE / UMUR :

1. Adakah ada pernah menghadapi masalah “double park” ?

Yes

no

2. Berapa lama anda mengambil masa untuk menunggu pemilik kereta untuk mengalihkan kereta?

Less than 30 minutes

more than 30 minutes

3. Adakah anda pernah menghadapi situasi kecemasan yang menyebabkan anda terpaksa “double park” kerana tempat parking terlalu penuh (seperti menghantar pesakit ke klinik ataupun melawat pesakit tenat di hospital)?

pernah

tidak pernah

4. Adakah anda pernah terlupa meletak informasi untuk berhubung di kereta anda semasa “double park”?

pernah

tidak pernah

5. Adakah anda berasa selamat untuk meniggalkan nombor telefon anda di semasa “double park” ?

selamat

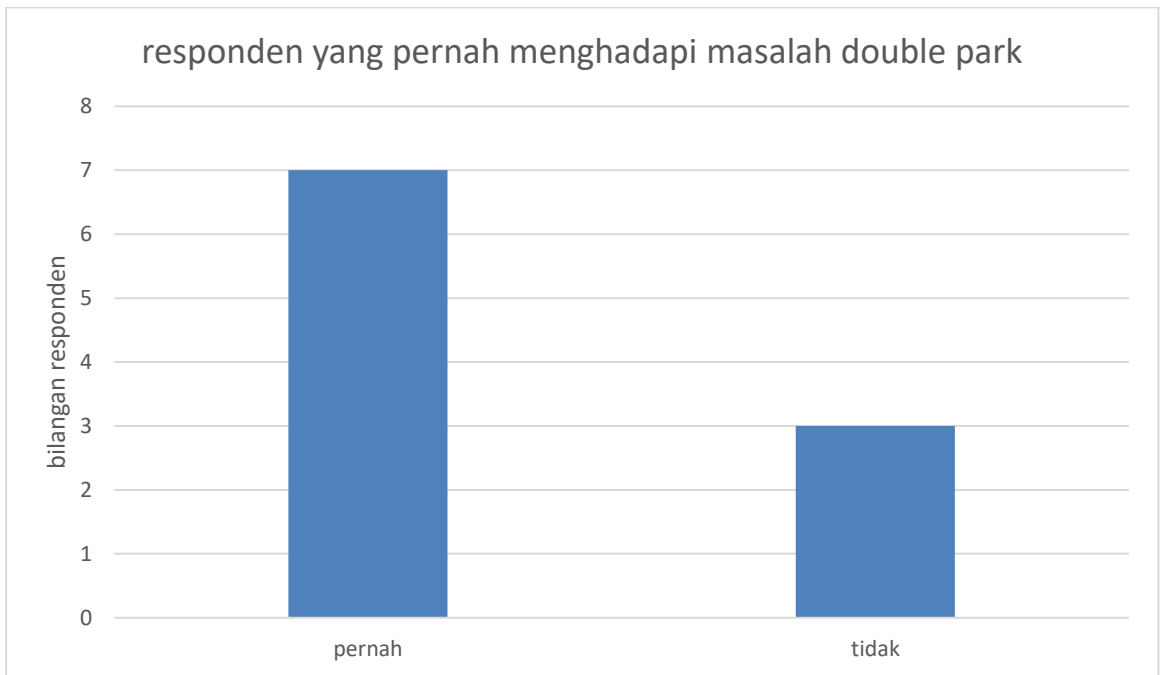
tidak selamat

6. Adakah anda menyokong pengasilan produk untuk memudahkan pihak pelaku dan pihak penerima double park ini untuk menerima dan menghantar isyarat dengan cara yang lebih selamat ,berkesan dan cekap dengan kos yang rendah?

Ya

tidak

**Q1** : Adakah ada pernah menghadapi masalah “double park” ?



**Q2** : Berapa lama anda mengambil masa untuk menunggu pemilik kereta untuk mengalihkan kereta?

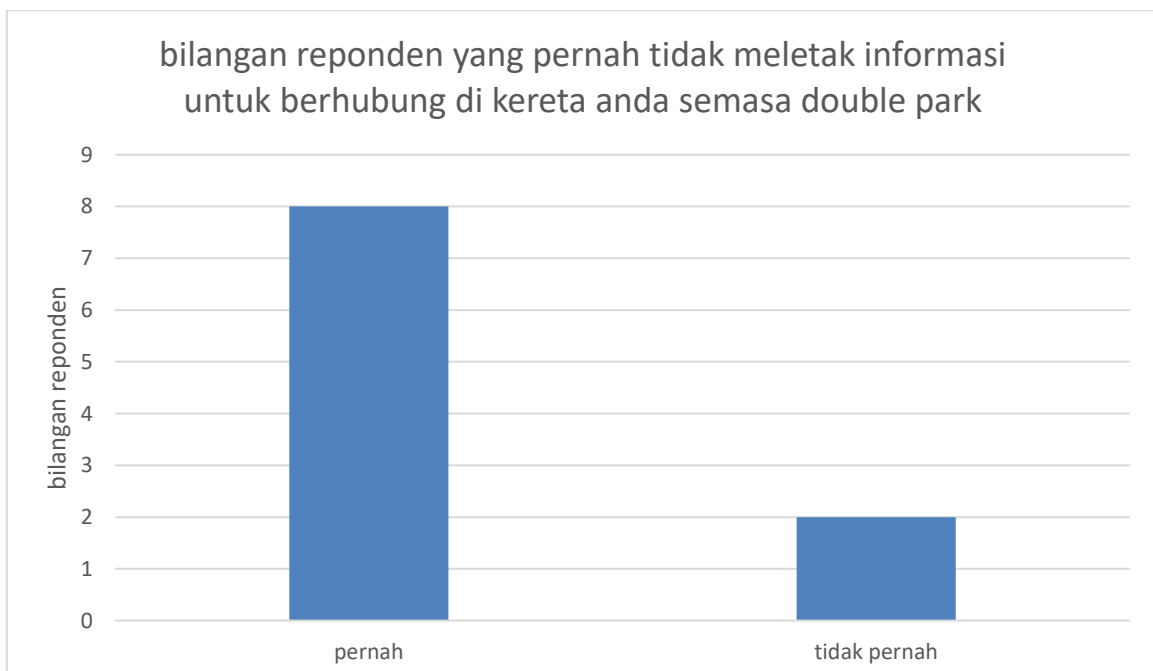




**Q3** : Adakah anda pernah menghadapi situasi kecemasan yang menyebabkan anda terpaksa “double park” kerana tempat parking terlalu penuh (seperti menghantar pesakit ke klinik ataupun melawat pesakit tenat di hospital)?



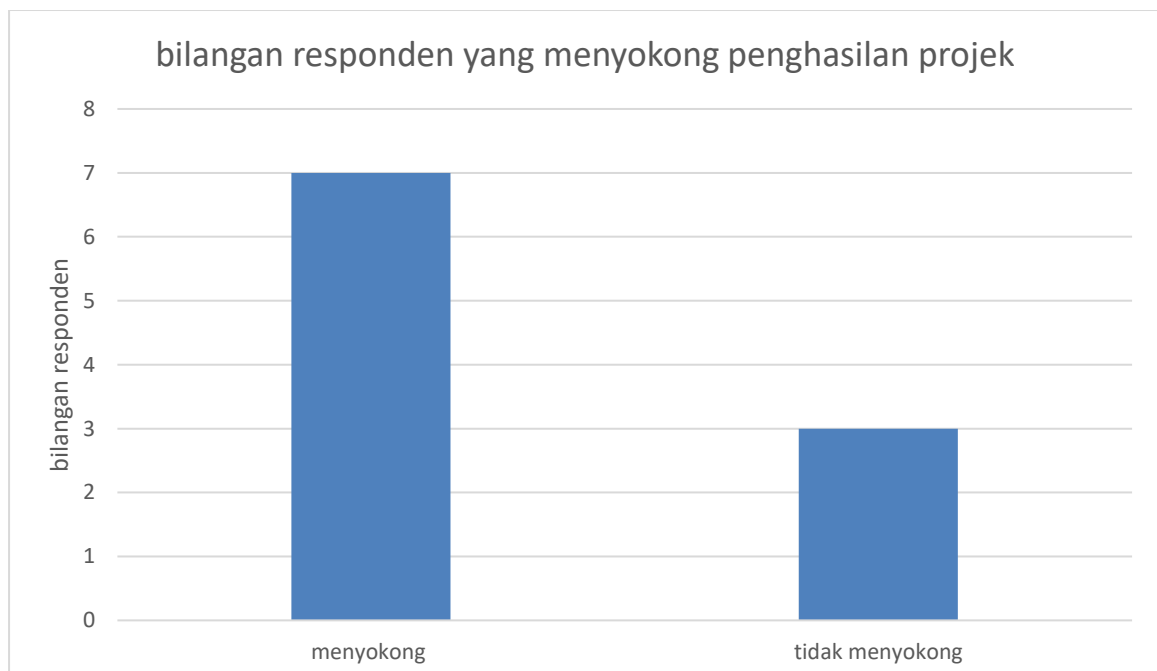
**Q4** : Adakah pernah terlupa meletak informasi untuk berhubung di kereta anda semasa “double park”?



**Q5** : Adakah anda berasa selamat untuk meniggalkan nombor telefon anda di semasa “double park” ?



**Q6** : Adakah anda menyokong pengasilan produk untuk memudahkan pihak pelaku dan pihak penerima double park ini untuk menerima dan menghantar isyarat dengan cara yang lebih selamat ,berkesan dan cekap dengan kos yang rendah?



## APPENDIX B – STANDARD OPERATION PROCEDURE

Step 1: download app using QR code and play store



For connect to device

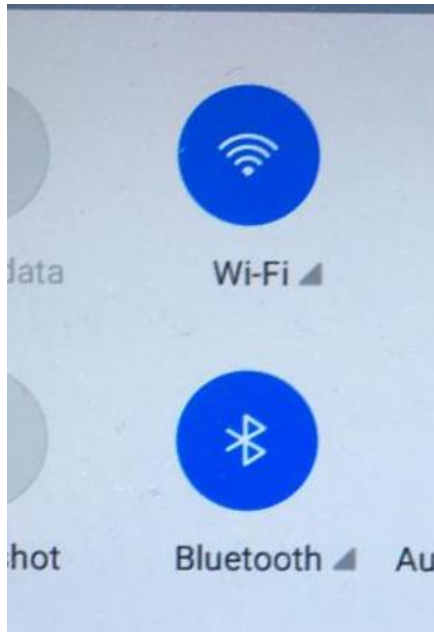


For connect to camera

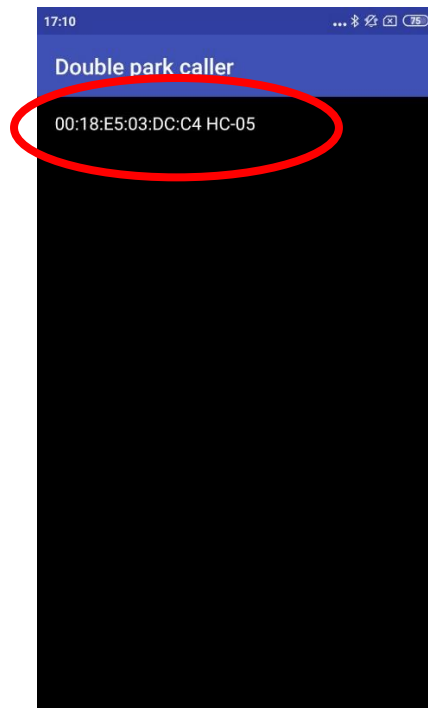
Step 2: Push on the start button to use the device



Step 3: open wifi and Bluetooth in mobile phone



Step 4: touch the “connect” button to connect with the device and choose device






Step 5: connect to the wifi of the camera to connect with camera

Step 6: touch the button “open camera” to open the camera and choose “Lan”



Step 7 : the device ready to use

## APPENDIX C – POSTER

 <p>KEMENTERIAN PENDIDIKAN MALAYSIA</p> <p>POLITEKNIK PITEK SULTAN SALAHUDDIN ABDUL AZIZ SHAH</p> <p>INVENTION &amp; INNOVATION TECHNOLOGY EXPOSITION</p>	<p><b>Tajuk</b> <i>INVENTING OF DOUBLE PARK OWNER CALLER</i></p> 	<p><b>Logo Pertandingan Jabatan</b></p>
<p><b>Ketua Penyelidik / Pecipta</b> <i>(Main Researcher / Inventor)</i></p> <p>MUHAMMAD SHAHMI AQMAR BIN BAHARUDIN</p>	<p><b>Nama Kumpulan Penyelidik / Pecipta Bersama</b> <i>(Researchers/Inventors Groups)</i></p> <p>MUHAMMAD SHAHMI AQMAR BIN BAHARUDIN MUHAMMAD SYAZMIE BIN ZAILANI</p>	<p><b>E-Mel</b> <i>(E-mail)</i></p> <p>SHAHBAHAR99@gmail.com</p>
<p><b>Info Grafik</b> <i>(Graphical Information)</i></p> 	<p><b>Deskripsi Produk Abstrak</b> <i>(Product Description/ Abstract)</i></p> <p>This paper presents the development of a inventing of project double park owner caller . Our society today has a dependency on advancing technology to improve our way of life as well as the lives of other individuals. Some of us are enamored with the advancement of vehicular technology as well as the way automobiles are used in order to impact our way to get to work, school or to vacate. But , the increase user of car had make a big problem that can be state as a global issues. The issues was the lack of parking space to vehicles user. It become a big problem if the user have emergency situation and will make them to double park then the blocked owner cannot go out from their park. So from that problem the people have make any solution about it among of it is leave the phone number , loose the handbrake and the latest one free space parking app but all of it not solve the problem good as well. So we have make one of the system double parking owner caller not to support of the double parking issues but to helping the issue in efficient way on the emergency situation in low cost uses . Among the feature of this double parking owner caller is it we use the Arduino UNO as a microcontroller to control the timer and display of the lcd. It also use Bluetooth hc-05 to make a wireless connection between the device and the app. After that, the device use display to show the information to the other user if them was blocked by the owner. The display also can help the other user when at night to know the device was function because it light up in dark to make it easier to see at night. Lastly, it use Passive Infrared Sensor as signal. The sensor will detect a hand wave and then it will give information to Arduino to give the alarm to the owner through app using Bluetooth. Finally, we sincerely hope that this project will help the car user to solve the problem double park in efficient way but it is also specially designed in small to make it suitable to put on the car front mirror with low cost installation.</p> <p>keyword : Arduino , PIR , Double Park</p>	

<p><b>Pernyataan Masalah (Problem Statement)</b></p> <ol style="list-style-type: none"> <li>1. The latest system technology can't help to solve problem in emergency situation when the parking totally full for example at hospital</li> <li>2. The latest product use the high cost installation</li> <li>3. The user forgot to loose the hand brake or leave their phone number</li> </ol>	<p><b>Objektif (Objectives)</b></p> <ol style="list-style-type: none"> <li>1. To design the device that solve the double parking issue with low cost consumption and installation</li> <li>2. To develop app and system that easy to use and understand to solve the double parking issue in efficient way on emergency situation.</li> </ol>	<p><b>Metodologi (Methodology)</b></p> <pre> graph TD     START([START]) --&gt; CollectingData[Collecting data to find problem statement]     CollectingData --&gt; Design[Design]     Design --&gt; Testing{Testing}     Testing -- NO --&gt; Design     Testing -- YES --&gt; CollectingData2[Collecting data to produce result]     CollectingData2 --&gt; END([END])   </pre>																																																																																				
<p><b>Potensi Market (Market Potentials)</b></p> <ol style="list-style-type: none"> <li>1) For the people have car</li> <li>2) For the people who live in the crowded city</li> </ol>	<p><b>Harta Intelek (IP) (Intellectual Property)</b></p> <p>Industrial Design :</p> <p>Copyright :</p>	<p><b>Analysis</b></p> <p>ANALYSIS OF BLUETOOTH CONNECTION</p> <table border="1"> <thead> <tr> <th rowspan="2">Distance (m)</th> <th colspan="2">Connection with device</th> </tr> <tr> <th>with obstacle</th> <th>without obstacle</th> </tr> </thead> <tbody> <tr><td>4</td><td>Good</td><td>Good</td></tr> <tr><td>8</td><td>Good</td><td>Good</td></tr> <tr><td>12</td><td>Good</td><td>Good</td></tr> <tr><td>16</td><td>Good</td><td>Low</td></tr> <tr><td>18</td><td>Low</td><td>Low</td></tr> <tr><td>20</td><td>Low</td><td>Lost connection</td></tr> <tr><td>22</td><td>Lost connection</td><td>Lost connection</td></tr> </tbody> </table> <p>ANALYSIS OF WIFI CAMERA CONNECTION AND VIDEO QUALITY</p> <table border="1"> <thead> <tr> <th rowspan="2">Distance (m)</th> <th colspan="2">Connection with device</th> <th colspan="2">Quality of video</th> </tr> <tr> <th>With obstacle</th> <th>without obstacle</th> <th>with obstacle</th> <th>without obstacle</th> </tr> </thead> <tbody> <tr><td>4</td><td>Good</td><td>Good</td><td>perfect</td><td>perfect</td></tr> <tr><td>8</td><td>Good</td><td>Good</td><td>Good</td><td>Good</td></tr> <tr><td>12</td><td>Good</td><td>Low</td><td>Good</td><td>Good</td></tr> <tr><td>16</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr> <tr><td>18</td><td>Low</td><td>Low</td><td>Low</td><td>Bad</td></tr> <tr><td>20</td><td>Low</td><td>Lost connection</td><td>Bad</td><td>Lost connection</td></tr> <tr><td>22</td><td>Lost connection</td><td>Lost connection</td><td>Lost connection</td><td>Lost connection</td></tr> </tbody> </table> <p>ANALYSIS OF PIR SENSOR</p> <table border="1"> <thead> <tr> <th>Distance (m)</th> <th>Sensing of PIR sensor</th> </tr> </thead> <tbody> <tr><td>200</td><td>Good</td></tr> <tr><td>400</td><td>Good</td></tr> <tr><td>600</td><td>Good</td></tr> <tr><td>800</td><td>Low</td></tr> <tr><td>1000</td><td>None</td></tr> <tr><td>1200</td><td>None</td></tr> </tbody> </table>	Distance (m)	Connection with device		with obstacle	without obstacle	4	Good	Good	8	Good	Good	12	Good	Good	16	Good	Low	18	Low	Low	20	Low	Lost connection	22	Lost connection	Lost connection	Distance (m)	Connection with device		Quality of video		With obstacle	without obstacle	with obstacle	without obstacle	4	Good	Good	perfect	perfect	8	Good	Good	Good	Good	12	Good	Low	Good	Good	16	Low	Low	Low	Low	18	Low	Low	Low	Bad	20	Low	Lost connection	Bad	Lost connection	22	Lost connection	Lost connection	Lost connection	Lost connection	Distance (m)	Sensing of PIR sensor	200	Good	400	Good	600	Good	800	Low	1000	None	1200	None
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<p><b>Hubungi (Contact)</b></p> <p>M. Shahmi Aamar Baharudin Pelajar Politeknik Sultan Salahuddin Abdul Aziz Shah Tel : 011-60889490</p>	<p><b>Nama Pemilik IP / Alamat (Owner IP Name / Address)</b></p> <p>Pengarah Politeknik Sultan Salahuddin Abdul Aziz Shah 40150 Shah Alam Selangor</p>																																																																																					

# APPENDIX D - PAMPHLET

## ANALYSIS

### ANALYSIS OF BLUETOOTH CONNECTION

Distance (m)	Connection with device	
	With obstacle	Without obstacle
4	Good	Good
8	Good	Good
12	Good	Good
16	Good	Low
18	Low	Low
20	Low	Lost connection
22	Lost connection	Lost connection

### ANALYSIS OF WIFI CAMERA CONNECTION AND VIDEO QUALITY

Distance (m)	Connection with device		Quality of video	
	With obstacle	Without obstacle	With obstacle	Without obstacle
4	Good	Good	perfect	perfect
8	Good	Good	Good	Good
12	Good	Low	Good	Good
16	Low	Low	Low	Low
18	Low	Low	Low	Bad
20	Low	Lost connection	Bad	Lost connection
22	Lost connection	Lost connection	Lost connection	Lost connection

### ANALYSIS OF PIR SENSOR

Distance (cm)	Sensing of PIR sensor
200	Good
400	Good
600	Good
800	Low
1000	None
1200	None



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ABDUL AZIZ SHAH

JABATAN KEJURUTERAAN  
ELEKTRIK



## PROJECT PICTURE



FIGURE 1: double park owner caller with IOT (hardware)

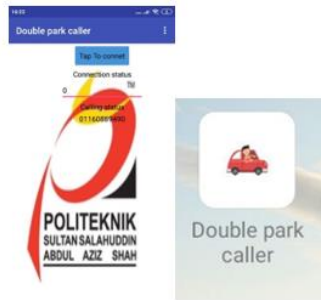


FIGURE 2: double park owner caller with IOT (software)

## PROJECT DISCRPTION

This double parking owner caller is suitable for any type of car user. This product is made by Arduino Uno, LCD Display, PIR Sensor, Battery cell and bluetooth. The cover is made from plastic. Dimension of the double park caller length is 16.2cm, width is 5.3cm and the height is 9.1cm. It is easy to use and the led will pop up once you switch on and connect with bluetooth. next the user need to install the apps to make a connection with the product. The can directly download the apps via QR code and link. Also this product can solve the problem when the car user in hurry or have emergency case, so user can use this product as caller when the blocked car owner want to leave the parking. Furthermore, this product would be in reasonable price because of low cost installation.

## PROBLEM STATEMENT

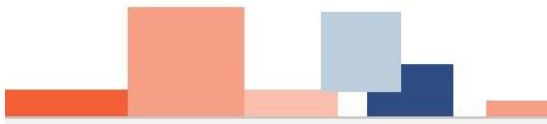
- The latest system technology can't help to solve problem in emergency situation when the parking totally full for example at hospital
- The latest product use the high cost installation
- The user forgot to loose the hand brake or leave their phone number

## OBJECTIVE

- To design the device that solve the double parking issue with low cost consumption and installation
- To develop app and system that easy to use and understand to solve the double parking issue in efficient way on emergency situation.



FIGURE 2: double park situation



## APPENDIX E – GANTT CHART

WEEK/ ACTIVITY	LW 1	LW 2	LW 3	LW 4	LW 5	LW 6	LW 7	LW 8	LW 9	LW 10	LW 11	LW 12	LW 13	LW 14	LW 15
PROJECT															
BRIEFING															
GROUP															
FORMATION															
SUBMISSION OF															
PROJECT TITLE															
PROPOSED PAPER															
PREPARATION															
PRESENTATION															
PROGRES OF															
THE PROJECT															
REPORT															
PRESENTATION AND SUBMISSION PROJECT															
SUBMISSION PROJECT															

SEMESTER 4

WEEK/ ACTIVITY	LW 1	LW 2	LW 3	LW 4	LW 5	LW 6	LW 7	LW 8	LW 9	LW 10	LW 11	LW 12	LW 13	LW 14
DISCUSSION AND GUIDANCE														
BUILD THE MODEL														
TESTING AND TROUBLESHOOTING														
IMPROVING THE PROJECT														
PROJECT PRESENTATION														
SUBMIT LOG BOOK														
SUBMIT FINAL REPORT														

SEMESTER 5

## APPENDIX F – TECHNICAL PAPER

APPENDIX G – PICTURE



17:10

...     75

Double park caller



Tap To connet

Connection status

0  TM

Calling status

01160889490

Open camera



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**SULTAN SALAHUDDIN**  
**ABDUL AZIZ SHAH**

## APPENDIX H – PROGRAMMING

```
#include <LiquidCrystal.h>
int pir = 7;
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

int brightness_pin = 6;
int brightness=100;

void setup()
{
  analogWrite(brightness_pin ,brightness);
  lcd.begin(16, 2);
  Serial.begin(9600);
  pinMode(pir,INPUT);
  pinMode(brightness_pin, OUTPUT);
}

void loop(){

if (digitalRead(pir) == HIGH){
  Serial.println("23");
  lcd.setCursor(0,0);
  lcd.print(" the owner car ");
  lcd.setCursor(0,1);
  lcd.print(" has been called");
  delay(5000);
  {
    lcd.setCursor(0,0);
    lcd.print("please wait 5sec");
    lcd.setCursor(0,1);
    lcd.print(" to call owner..");
    delay(5000);
  }
}
else {
```

```
lcd.setCursor(0, 0);  
lcd.print("wave your hand ");  
lcd.setCursor(0, 1);  
lcd.print("to call owner ");  
delay(3000);  
}  
}
```