FINAL YEAR PROJECT

DIPLOMA ENGINEERING MECHANICAL (PACKAGING)

FYP TITLE	SMARTFOOD STEAMER WITH ARDUINO BASED COUNTDOWN TIMER
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ABSTRACT

The main purpose of this project is to produce a more efficient and effective smart food steamer for the user, as well as reduce the problem of an analogue time control panel that is damaged and stuck due to long use. A common problem with electric food steamers that have an analogue timing control panel is that they are easily damaged and get stuck after prolonged use. Due to this problem, users have to use it by looking at the time manually on a wall clock or watch to find out whether the cooked food has reached the set time limit or not. To solve this problem, we want to produce a smartfood steamer that has two methods of using the time set: the analogue time control panel that is available on the steamer and the digital time control panel that we will produce using an Arduino-based countdown timer. With these two methods of using the time control panel, if the analogue time control panel is damaged or stuck, the user can still use the steamer with the digital time control panel. In conclusion, with the production of smartfood steamers that have two time control panels, users can save on high capital costs to repair the analogue time control panel that is damaged or stuck on the steamer.

ABSTRAK

Tujuan utama projek ini adalah untuk menghasilkan pengukus makanan pintar yang lebih cekap dan berkesan untuk pengguna, serta mengurangkan masalah panel kawalan masa analog yang rosak dan tersekat akibat penggunaan yang lama. Masalah biasa dengan pengukus makanan elektrik yang mempunyai panel kawalan pemasaan analog ialah ia mudah rosak dan tersekat selepas penggunaan berpanjangan. Disebabkan masalah ini, pengguna terpaksa menggunakannya dengan melihat masa secara manual pada jam dinding atau jam tangan untuk mengetahui sama ada makanan yang dimasak telah mencapai had masa yang ditetapkan atau tidak. Untuk menyelesaikan masalah ini, kami ingin menghasilkan pengukus makanan pintar yang mempunyai dua kaedah menggunakan set masa: panel kawalan masa analog yang tersedia pada pengukus dan panel kawalan masa digital yang akan kami hasilkan menggunakan pemasa undur berasaskan Arduino. . Dengan dua kaedah menggunakan panel kawalan masa ini, jika panel kawalan masa analog rosak atau tersekat, pengguna masih boleh menggunakan pengukus dengan panel kawalan masa digital. Kesimpulannya, dengan penghasilan pengukus makanan pintar yang mempunyai dua panel kawalan masa, pengguna dapat menjimatkan kos modal yang tinggi untuk membaiki panel kawalan masa analog yang rosak atau tersangkut pada pengukus.

ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious and the Most Merciful. All praises to Allah and His blessing for the completion of this research. We thank God for all the openings, trials and strength that have been poured on us to finish writing the research successfully. We endured so important during this process, not only from the academic aspect but also from the aspect of personality. My humblest gratefulness to the holy Prophet Muhammad (Peace shall be upon him) whose way of life has been a nonstop guidance for us.

We would like to express our special thanks of gratefulness to our supervisor (MADAM ANI BINTI YAAKUB) who gave us the golden occasion to do this awful design on the content (Smart Food Steamer With Arduino Based Countdown Timer), which also helped us in doing a lot of Research and we came to know about so numerous new effects. We are also veritably honoured that she is willing to guide and give guidance to us throughout the perpetration of this design. She also handed numerous creative and innovative ideas and supported in the selection of design titles. She also gave easy- to- understand explanation and was willing to spend time with us during these 14 weeks. Thank you that cannot be expressed in words for her experience in guiding, tutoring and managing us patiently. She is also not shy to conduct knowledge as long as she manages the design to ensure that the design runs easily and impeccably.

Finally, thank you to the JKM Lecturer for the advice and counselling given. In addition, we would like to thank the DMP5A students who also helped us in making this project a success. Our parents who also helped us in answering the questionnaire questions that were given.

PENGHARGAAN

Dengan nama Allah yang Maha Pemurah lagi Maha Penyayang. Segala puji bagi Allah dan limpah kurniaNya kerana dapat menyempurnakan kajian ini. Syukur ke hadrat Ilahi atas segala pembukaan, dugaan dan kekuatan yang telah dicurahkan kepada kami untuk menyelesaikan penulisan kajian ini dengan jayanya. Kami bertahan begitu penting semasa proses ini, bukan sahaja dari aspek akademik tetapi juga dari aspek sahsiah. Setinggi-tinggi kesyukuran saya kepada junjungan Nabi Muhammad (Saw.) yang cara hidupnya telah menjadi panduan tanpa henti bagi kita.

Kami ingin merakamkan ucapan terima kasih yang tidak terhingga kepada penyelia kami (PUAN ANI BINTI YAAKUB) yang memberi kami peluang keemasan untuk melakukan reka bentuk yang hebat ini pada kandungan (Pengukus Makanan Pintar Dengan Pemasa Undur Berasaskan Arduino), yang turut membantu kami dalam melakukan banyak Penyelidikan dan kami mendapat tahu tentang begitu banyak kesan baharu. Kami juga amat berbesar hati kerana beliau sudi membimbing dan memberi tunjuk ajar kepada kami sepanjang melaksanakan reka bentuk ini. Beliau juga menyampaikan banyak idea kreatif dan inovatif serta menyokong dalam pemilihan tajuk reka bentuk. Dia juga memberikan penerangan yang mudah difahami dan sanggup meluangkan masa bersama kami selama 14 minggu ini. Terima kasih yang tidak dapat diungkapkan dengan kata-kata atas pengalaman beliau membimbing, memberi tunjuk ajar dan menguruskan kami dengan sabar. Dia juga tidak segan silu untuk menjalankan ilmu selagi dia menguruskan reka bentuk untuk memastikan reka bentuk berjalan dengan mudah dan sempurna.

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DECLARATION BY CANDIDATE

I'm, Nurul Fatihah Binti Zahari (08DMP20F1016) is a final year student in Diploma In Mechanical Engineering Packaging , Engineering Department, Polytechnic Sultan Salahuddin Abdul Aziz Shah, of Persiaran Usahawan,40150 Shah Alam,Selangor. (Hereafter as to Polytechnic)

2. I acknowledge that the 'Project above' and its intellectual property are the original work/copy of me and my group member without taking or irritiating any intellectual property from others.

3. I agree to give up the intellectual property ownership of the project to the Polytechnic in order to meet the requirements for awarding us in Diploma in Mechanical Engineering Packaging.

(Made an truly recognized by)

NURUL FATIHAH BINTI ZAHARI (08DMP20F1016)

INTAN SABRINA BINTI KASMAN (08DMP20F1013)

NUR BATRISYIA BINTI ZULKIFLI (08DMP20F1018)

Date : 25/11/2022

DECLARATION BY THE SUPERVISORS

The research conducted and also the writing of this were under our supervision.

Signature: 

Main Supervisor: ANI BINTI YAAKUB

Faculty: Engineering Mechanical, Polytechnic Sultan Salahuddin Abdul Aziz Shah.

Date : 25/11/2022

Contents

CHAPTER 1: INTRODUCTION

These days, a lot of people are preoccupied with their daily obligations. Some of them lack the time to prepare wholesome meals. Therefore, they decide to get fast food from places like McDonald's, KFC, Pizza Hut, etc. Due to this issue, the Smart Food Steamer is the perfect substitute for everyone, especially those who are employed. We have developed a proprietary food steamer technology called Smart Food Steamer With Arduino Based Countdown Timer. It offers a simple time control panel for greater convenience and security. Because it can simultaneously cook different meals at different stages, the smart food steamer can also save users time and energy. In this project, we aim to create a smart food steamer with two ways to regulate the time, including an analogue time control panel already built into the steamer and a digital time control panel that we will create using an Arduino-based countdown timer. The food steamer can be operated for longer than it can with the current control panels by using these two panel control panels.

1.1 INTRODUCTION

In this chapter, we will highlight issues related to the background, problem statement and project objectives that we want to produce in our final year project which is Smartfood Steamer with Arduino Based Countdown Timer.

1.2 RESEARCH BACKGROUND

Steaming is widely recognized as one of the healthiest ways to cook your food. It stores more nutrients than boiling, and is equally easy to do especially if you invest in a custom -made electric smart food steamer. The steaming method does not require cooking with oil thus it avoids producing unwanted fat. The resulting dish is very lighter, healthier and softer on the palate. When cooking fish and chicken, steam dissolves fat, making food lower in calories and easier to digest. Smart Food Steamer is a food steamer technology unique to us. It has an easy -to -use time control panel for better convenience and safety. Furthermore, Smart Food Steamer can save energy and user time because with this smart food steamer it can put various foods in stages at one time. As I said earlier , Nutrients in food will be awake while steaming food.This is because, some nutrients in food will be damaged due to direct contact with heat from water and oil when cooked with other methods such as frying or boiling

method. So, if our food is cooked by steaming method, the cooked food will cook perfectly and maximum effectiveness is maintained.

1.3 PROBLEM STATEMENT:

As we know, the existing Steamers in the market that have analog type time control panel are easily damaged and stuck when used for a long time. Due to the broken and stuck time control panel, users have to use it manually by looking at the time on the wall clock, clock hands and so on to know the steamed dishes have reached the set time or not.In addition, the time control panel can also cause power outages resulting in long wearability.Therefore, when the time control panel is always broken, users will send a food steamer to the shop to be repaired.so, the user has to incur a high cost of capital to repair the damaged or outgoing analog time control panel.

1.4 OBJECTIVE

The main purpose of this project is to modify the smart food steamer to work more efficiently and effectively so that it can help people use it well. In addition, this project is also intended to help reduce damage to the analogue time control panel on the smart food steamer. With that, this smart food steamer can reduce the burden on users who use it because it is easy to use. Next, the purpose of this project is to produce a smart food steamer that has two time control panels that are analogue and digital so that it will be able to facilitate users' use of this smart food steamer well and quickly.

1.5 SCOPE PRODUCT

This project focuses on producing a more efficient and effective smart food steamer for the user, as well as reducing the problem of an analogue time control panel that is damaged and stuck due to long use. In addition, this smart food steamer is made for people who enjoy steaming food and make use of electric steamers.

1.6 DESCRTIPTION

The main component of this Smartfood Steamer project is a microcontroller known as the Arduino Nano. One microcontroller board that is compact, complete, and supports the use of breadboards is the Arduino Nano. The ATmega328 or Atmega 16 basic microcontrollers are used in the creation of the Arduino Nano (for Arduino Nano version 3.x) (for Arduino version 2.x). The Arduino Nano comes in a different form factor but offers essentially the same functionality as the Arduino Duemilanove.

A 16x2 LCD display is also used as the primary component in this project. The 16x2 LCD Display is a data viewer module that shows data as text or images by using liquid crystal as the display medium. This 16x2 LCD panel will show time-related numbers in hours, minutes, and seconds as part of our project.

The project also included four tactile push-button switches. By manually pressing the operating section, a tactile switch, as we are all aware, permits electricity to flow in an electrical circuit. The switch is used to deliver an input signal that activates a piece of equipment or a gadget. When pressed, the switch turns on; when released, it deactivates. Momentary action is what this activity is known as, and it can only be carried out at low voltage and low current.

In this project, we also use a piezo buzzer. Briefly, a piezoelectric buzzer is a type of electronic device used to produce a tone, alarm, or sound. It's lightweight with a simple construction, and it's usually a low-cost product. The function of the piezo buzzer in our project is that it will produce a sound when the time on the LCD display has reached the set time.

We then use a 5 V relay. A 5V relay is an automatic switch that is commonly used in an automatic control circuit and to control a high-current load using a low-current signal. The input voltage of the relay signal ranges from 0 to 5 volts.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter, we collect all the components that we use in the production of the project Smartfood Steamer With Arduino Based Countdown Timer along with its definition and function.

2.2 COMPONENT

2.2.1 ARDUINO NANO

- The Arduino Nano is a small, complete, and breadboard-friendly board based on the ATmega328 (Arduino Nano 3.x). It has more or less the same functionality of the Arduino Duemilanove, but in a different package. It lacks only a DC power jack, and works with a Mini-B USB cable instead of a standard one.

2.2.2 LCD DISDLAY 16X2

- A 16x2 LCD means it can display 16 characters per line and there are 2 such lines. In this LCD each character is displayed in 5x7 pixel matrix. The 16 x 2 intelligent alphanumeric dot matrix display is capable of displaying 224 different characters and symbols.

2.2.3 RELAY 5V

- A 5v relay is an automatic switch that is commonly used in an automatic control circuit and to control a high-current using a low-current signal. The input voltage of the relay signal ranges from 0 to 5V.

2.2.4 PIEZO BUZZER

- In simplest terms, a piezo buzzer is a type of electronic device that's used to produce a tone, alarm or sound. It's lightweight with a simple construction, and it's typically a low-cost product. Yet at the same time, depending on the piezo ceramic buzzer specifications, it's also reliable and can be constructed in a wide range of sizes that work across varying frequencies to produce different sound outputs.

2.2.5 TACTILE PUSH BUTTON SWITCH

- These small sized switches are placed on PCBs and are used to close an electrical circuit when the button is pressed by a person. When the button is pressed, the switches turn ON and when the button is released, the switches turn OFF. A tactile switch is a switch whose operation is perceptible by touch.

2.2.6 BREADBOARD

- A breadboard, or protoboard, is a construction base for prototyping of electronics. Originally the word referred to a literal bread board, a polished piece of wood used when slicing bread. In the 1970s the solderless breadboard (a.k.a. plugboard, a terminal array board) became available and nowadays the term "breadboard" is commonly used to refer to these.

2.2.7 9V BATTERY

- The nine-volt battery, or 9-volt battery, is an electric battery that supplies a nominal voltage of 9 volts. Actual voltage measures 7.2 to 9.6 volts, depending on battery chemistry. Batteries of various sizes and capacities are manufactured; a very common size is known as PP3, introduced for early transistor radios.

2.2.8 9V BATTERY CONNECTER

- This is the 9V battery connector used with 9V high watt battery. This has two wires with standard color convention where black is ground and red is positive voltage. The wire used in this battery connector is a copper wire.

2.2.9 JUMPER WIRE

Jumper wires are simply wires that have connector pins at each end, allowing them to be used to connect two points to each other without soldering. Jumper wires are typically used with breadboard and other prototyping tools in order to make it easy to change a circuit as needed. Fairly simple.In fact, it doesn't get much more basic than jumper wires. Jumper wires typically come in three versions: male-to-male, male-to-female and female-to-female. The difference between each is in the end point of the wire. Male ends have a pin protruding and

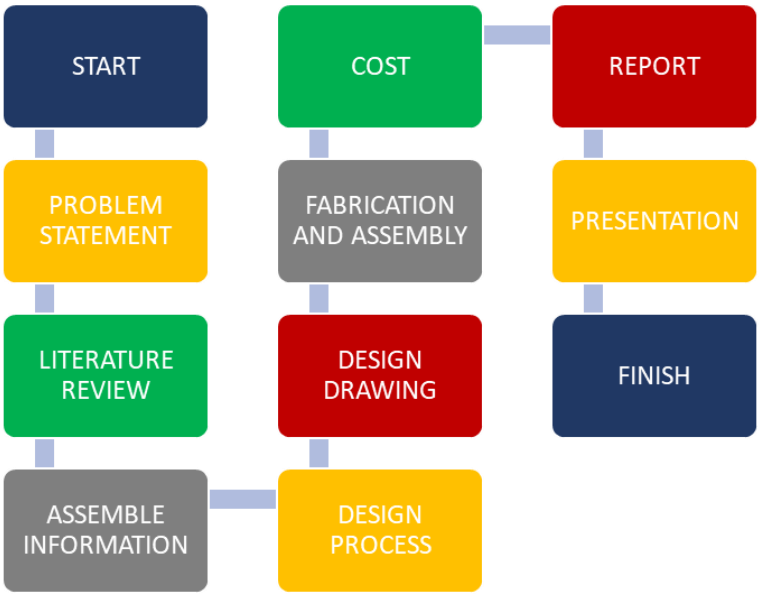
can plug into things, while female ends do not and are used to plug things into. Male-to-male jumper wires are the most

CHAPTER 3: METHODOLOGY

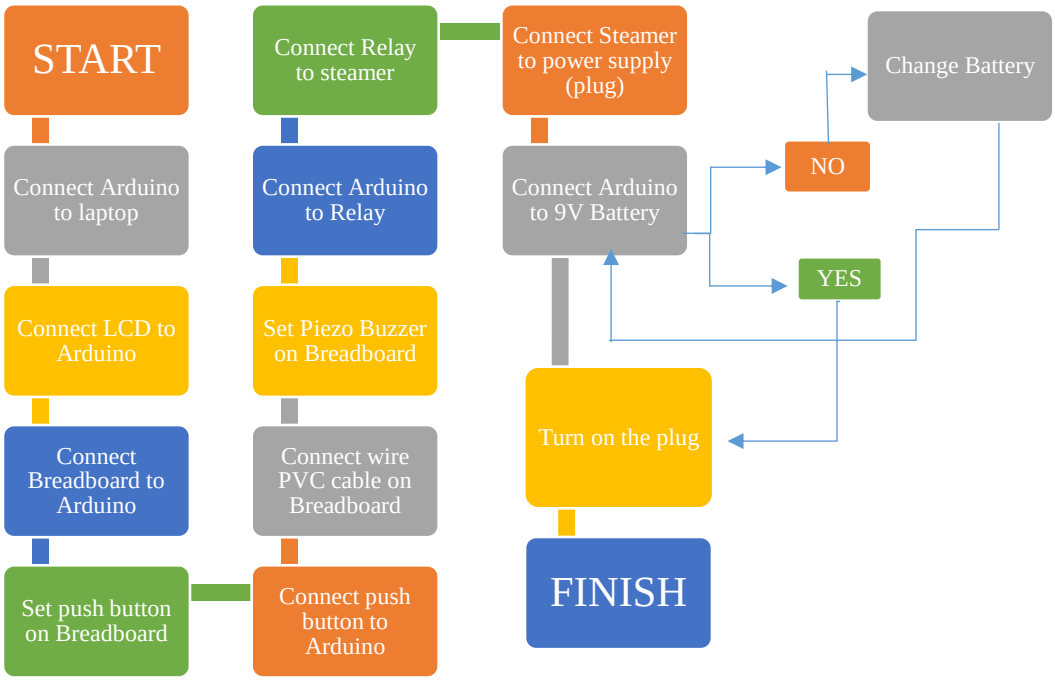
3.1 INTRODUCTION

In this chapter, we will hightlight issues related to the design project,methodology and component that we will use in our final year project which is Smartfood Steamer with Arduino Based Countdown Timer.

3.2 FLOW CHART METHODOLOGY



3.3 FLOW CHART EXPLAINATION



1) Connect Arduino to laptop (to set coding)
2) Connect LCD to Arduino
   - SDA to SDA
   - SCL to SCL
3) Connect Breadboard to Arduino
   - Positive (+) to 5V
   - Negative (-) to GND
4) Set push button on Breadboard
5) Connect push button to Arduino
   - Push button 1 to AO
   - Push button 2 to A1
   - Push Button 3 to A2
   - Push button 4 to A3
6) Connect wire PVC cable on Breadboard
7) Set Piezo Buzzer on Breadboard
8) Connect Piezo Buzzer (on breadboard) to Arduino
   - Piezo buzzer to 5
9) Connect Arduino to Relay
   - V to VCC
   - G to GND
   - S to IN
10) Connect Relay to steamer
11) Connect Arduino to 9V battery
12) Connect Steamer to power supply (plug)
13) Turn on the plug
14) Finish

3.4 CODE FOR CODING

```
#include <LiquidCrystal.h>
#include "Countimer.h"
Countimer tdown;
LiquidCrystal lcd(12, 11, 10, 9, 8, 7);
#include <EEPROM.h>

#define bt_set    A3
#define bt_up     A2
#define bt_down   A1
#define bt_start  A0

int time_s = 0;
int time_m = 0;
int time_h = 0;

int set = 0;
int flag1=0, flag2=0;

int relay = 5;
int buzzer = 6;

void setup() {
Serial.begin (9600);

pinMode(bt_set,   INPUT_PULLUP);
pinMode(bt_up,    INPUT_PULLUP);
pinMode(bt_down,  INPUT_PULLUP);
pinMode(bt_start, INPUT_PULLUP);
```

```
pinMode(relay, OUTPUT);
pinMode(buzzer, OUTPUT);

lcd.begin(16, 2);
lcd.clear();
lcd.setCursor(0,0);
lcd.print("   Welcome To   ");
lcd.setCursor(0,1);
lcd.print("Countdown  Timer");
tdown.setInterval(print_time, 999);
eeprom_read();
delay(1000);
lcd.clear();
}

void print_time(){
time_s = time_s-1;
if(time_s<0){time_s=59; time_m = time_m-1;}
if(time_m<0){time_m=59; time_h = time_h-1;}
}

void tdownComplete(){Serial.print("ok");}

//tdown.stop();

void loop(){
tdown.run();

if(digitalRead (bt_set) == 0){
```

```
if(flag1==0 && flag2==0){flag1=1;
set = set+1;
if(set>3){set=0;}
delay(100);
}
}else{flag1=0;}

if(digitalRead (bt_up) == 0){
if(set==0){tdown.start(); flag2=1;}
if(set==1){time_s++;}
if(set==2){time_m++;}
if(set==3){time_h++;}
if(time_s>59){time_s=0;}
if(time_m>59){time_m=0;}
if(time_h>99){time_h=0;}
if(set>0){eeprom_write();}
delay(200);
}

if(digitalRead (bt_down) == 0){
if(set==0){tdown.stop(); flag2=0;}
if(set==1){time_s--;}
if(set==2){time_m--;}
if(set==3){time_h--;}
if(time_s<0){time_s=59;}
if(time_m<0){time_m=59;}
if(time_h<0){time_h=99;}
if(set>0){eeprom_write();}
delay(200);
}
```

```
if(digitalRead (bt_start) == 0){ flag2=1;
  eeprom_read();
  digitalWrite(relay, HIGH);
  tdown.restart();
  tdown.start();
}

lcd.setCursor(0,0);
if(set==0){lcd.print("      Timer     ");}
if(set==1){lcd.print("  Set Timer SS  ");}
if(set==2){lcd.print("  Set Timer MM  ");}
if(set==3){lcd.print("  Set Timer HH  ");}

lcd.setCursor(4,1);
if(time_h<=9){lcd.print("0");}
lcd.print(time_h);
lcd.print(":");
if(time_m<=9){lcd.print("0");}
lcd.print(time_m);
lcd.print(":");
if(time_s<=9){lcd.print("0");}
lcd.print(time_s);
lcd.print("    ");

if(time_s==0 && time_m==0 && time_h==0 && flag2==1){flag2=0;
tdown.stop();
digitalWrite(relay, LOW);
digitalWrite(buzzer, HIGH);
delay(300);
```

```
digitalWrite(buzzer, LOW);
delay(200);
digitalWrite(buzzer, HIGH);
delay(300);
digitalWrite(buzzer, LOW);
delay(200);
digitalWrite(buzzer, HIGH);
delay(300);
digitalWrite(buzzer, LOW);
}

if(flag2==1){digitalWrite(relay, HIGH);}
else{digitalWrite(relay, LOW);}

delay(1);
}

void eeprom_write(){
EEPROM.write(1, time_s);
EEPROM.write(2, time_m);
EEPROM.write(3, time_h);
}

void eeprom_read(){
time_s =  EEPROM.read(1);
time_m =  EEPROM.read(2);
time_h =  EEPROM.read(3);
}
```

3.5 COMPONENT AND TOOLS REQUIRED

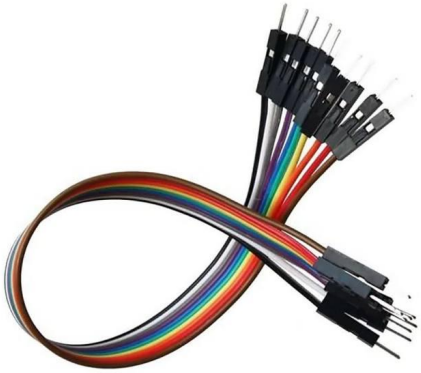
SOFTWARE

The Arduino Integrated Development Environment - or Arduino Software (IDE) - connects to the Arduino boards to upload programs and communicate with them. Programs written using Arduino Software (IDE) are called sketches**.**

Arduino IDE Software is an easy opensource electronic hardware and software platform. We use Arduino IDE Software to coding the Arduino Nano and connect to our project.

COMPONENT	FEATURES
Arduino Nano 	1) It has 22 input/output pins in total. 2) 14 of these pins are digital pins. 3) Arduino Nano has 8 analogue pins. 4) It has 6 PWM pins among the digital pins. 5) It has a crystal oscillator of 16MHz. 6) It's operating voltage varies from 5V to 12V.
16x2 LCD Display 	1) The operating voltage of this LCD is 4.7V-5.3V 2) It includes two rows where each row can produce 16-characters. 3) The utilization of current is 1mA with no backlight 4) Every character can be built with a 5×8 pixel box 5) The alphanumeric LCDs alphabets & numbers 6) Is display can work on two modes like 4-bit & 8-bit 7) These are obtainable in Blue & Green Backlight 8) It displays a few custom generated characters
Relay 5V 	1) Normal Voltage is 5V DC 2) Normal Current is 70mA 3) AC load current Max is 10A at 250VAC or 125V AC 4) DC load current Max is 10A at 30V DC or 28V DC 5) It includes 5-pins & designed with plastic material 6) Operating time is 10msec 7) Release time is 5msec 8) Maximum switching is 300 operating per minute

Piezo Buzzer 	1) Wide operating voltage: 3~250 V. 2) Lower current consumption: less than 30 mA higher rated frequency. 3) Larger footprint. 4) Higher sound pressure level.
Tactile Push Button Switch 	1) A tactile switch allows electricity to flow in an electrical circuit by manually pressing the operating section. The switch is used to supply input signal to actuate a device or equipment.
Breadboard 	1) Distribution Strips are two 2) Wire Size is 21 to 26 AWG wire 3) Tie Points are two hundred 4) Withstanding Voltage is 1,000V AC 5) Tie points within IC are 630 6) Insulation Resistance is DC500V or 500MΩ 7) Dimension is 6.5*4.4*0.3 inch 8) Rating is 5Amps 9) ABS plastic through color legend 10) ABS heat Distortion Temperature is 183° F (84° C)Hole or Pitch Style is 2.54mm

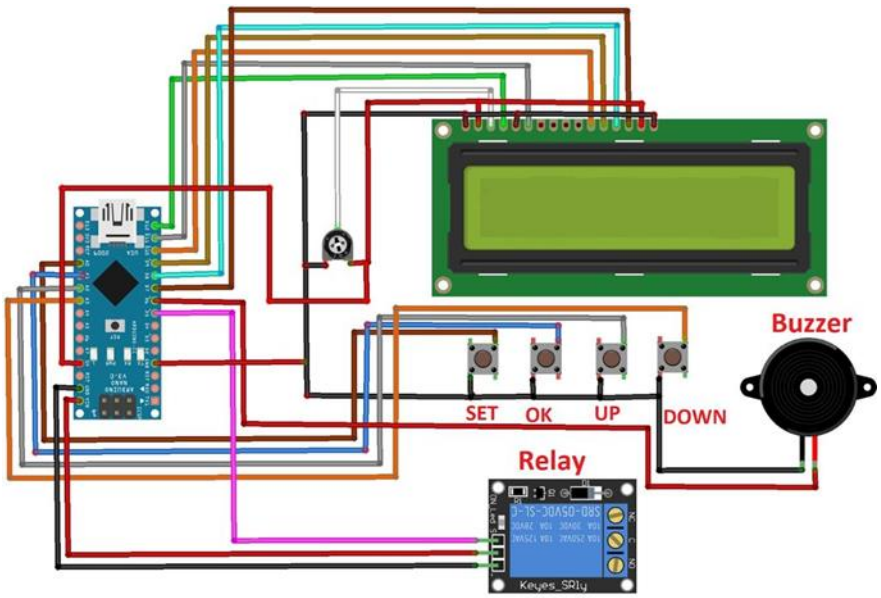
Jumper wire 	Jumper wires are simply wires that have connector pins at each end, allowing them to be used to connect two points to each other without soldering. Jumper wires are typically used with breadboard and other prototyping tools in order to make it easy to change a circuit as needed. Fairly simple.
9V Battery Connecter 	• Connects to a 9V DC battery. • Have two terminals. • It could be connected to standard a 9V battery. • Good for use in science experiments. • Teaching tool for electronics lessons.
Battery 9V 	• Capacity (Lithium Primary) : 1200 mAh • Capacity (NiMH) : 175-300mAh • Operating Temperature:0°C – 60°C • Length:17.5 mm

CHAPTER 4: DESIGN OF PRODUCT

4.1 INTRODUCTION

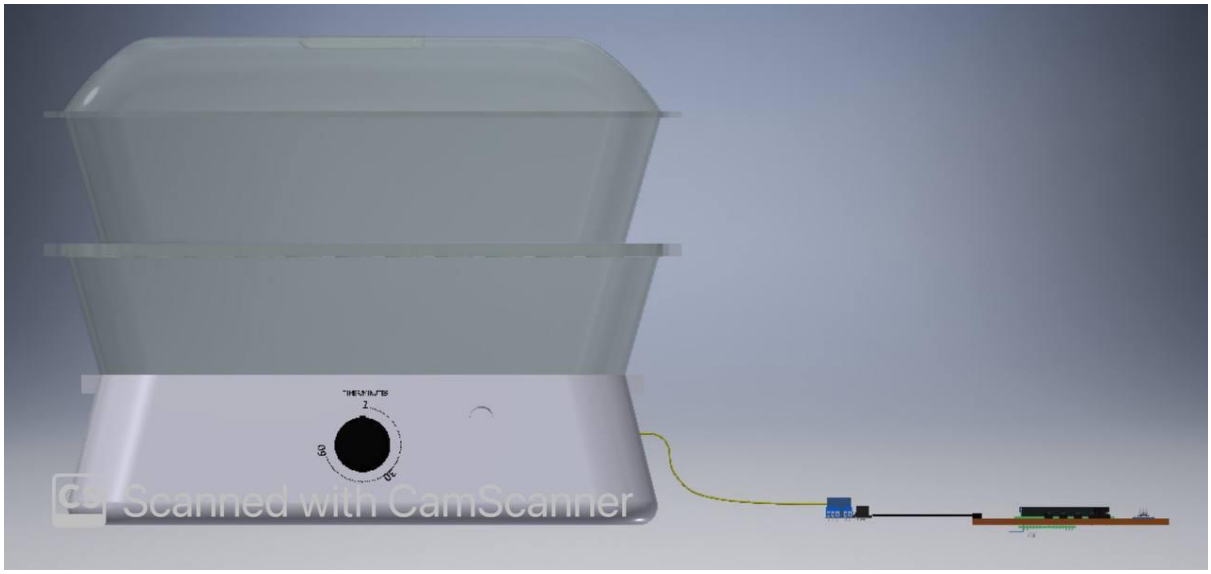
We will present our project design from the front, back, right side, left side, top view, and bottom views in this chapter. This design sketch of our project was produced using the Autodesk Inventor programme. Next, we detail the bills of materials and expenditures necessary to finish this Smartfood Steamer with Arduino Based Countdown Timer project in this chapter. Finally, we talk about the project's product scope.

4.2 CIRCUIT DIAGRAM ARDUINO BASED COUNTDOWN TIMER

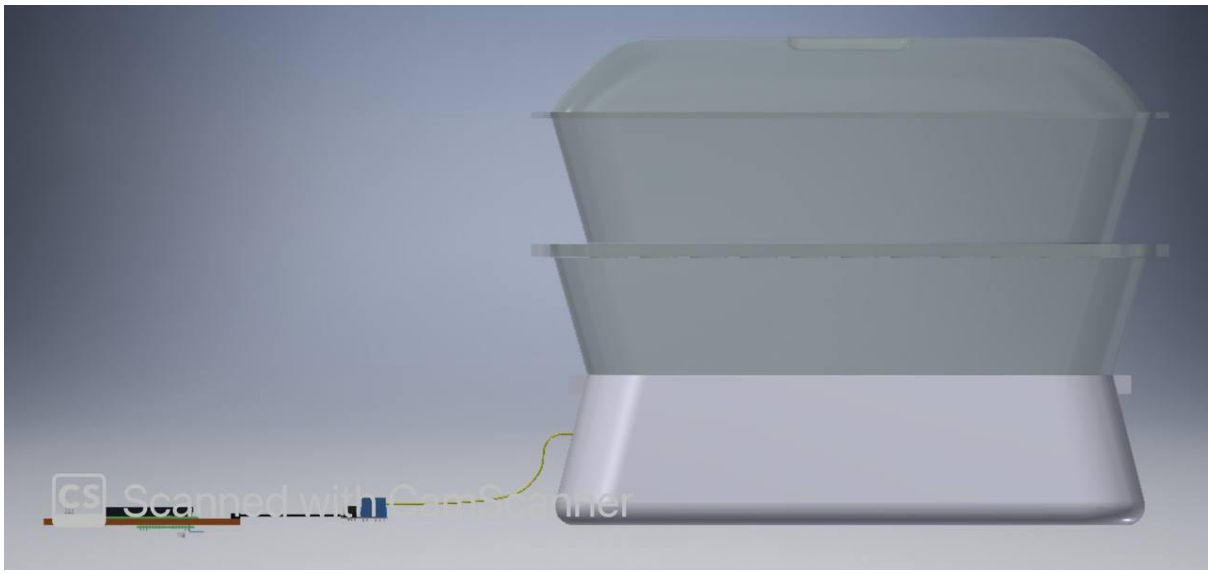


4.3 DESIGN OF PRODUCT

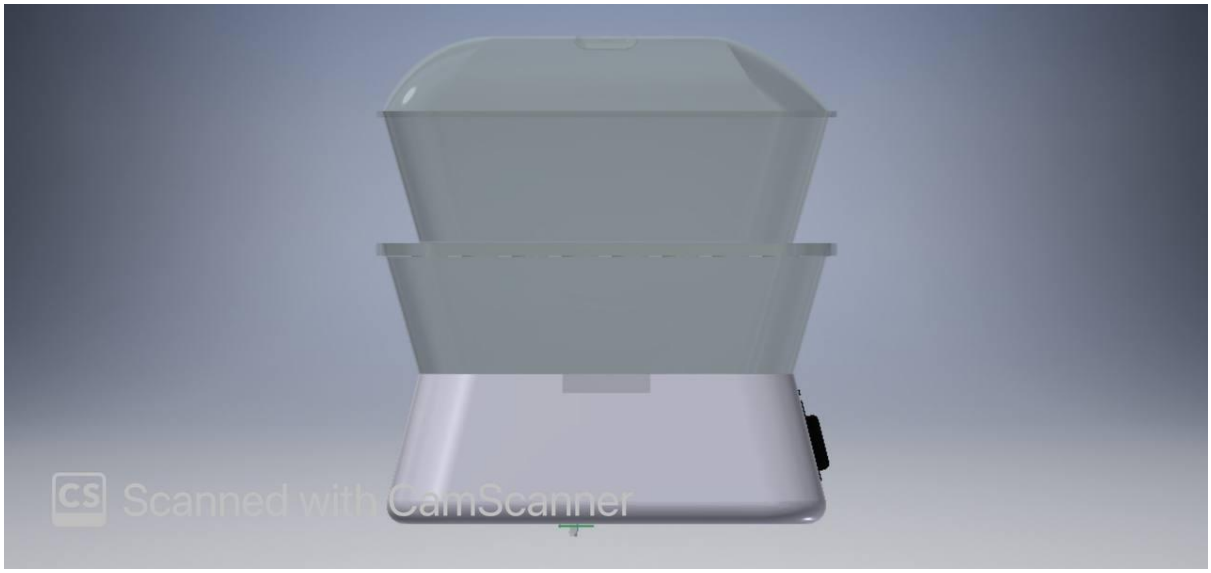
FRONT SIDE



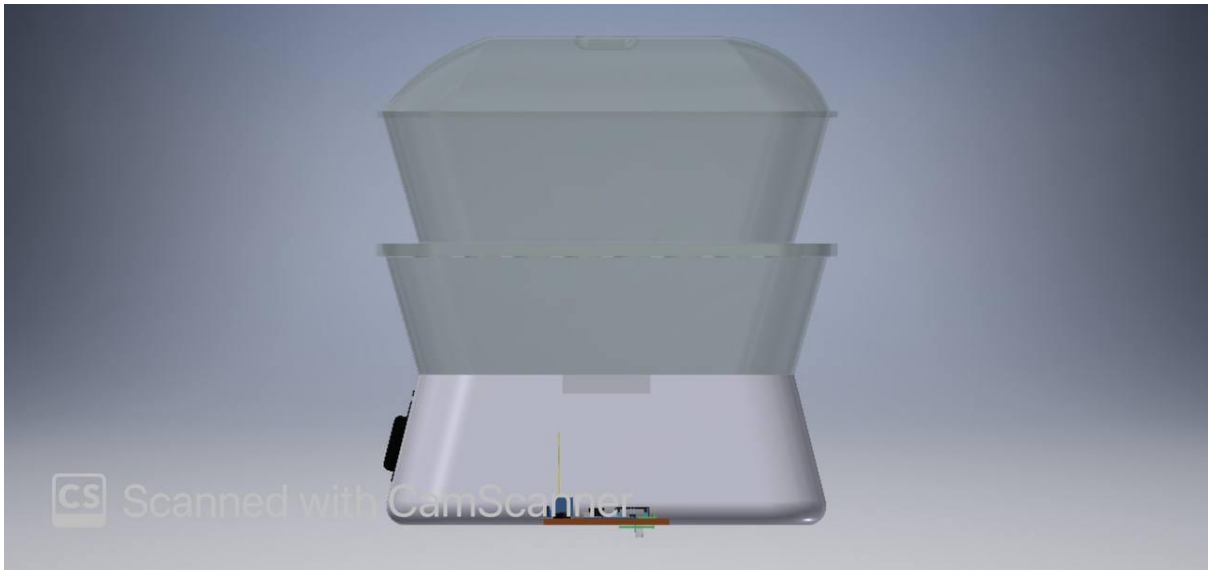
BACK SIDE



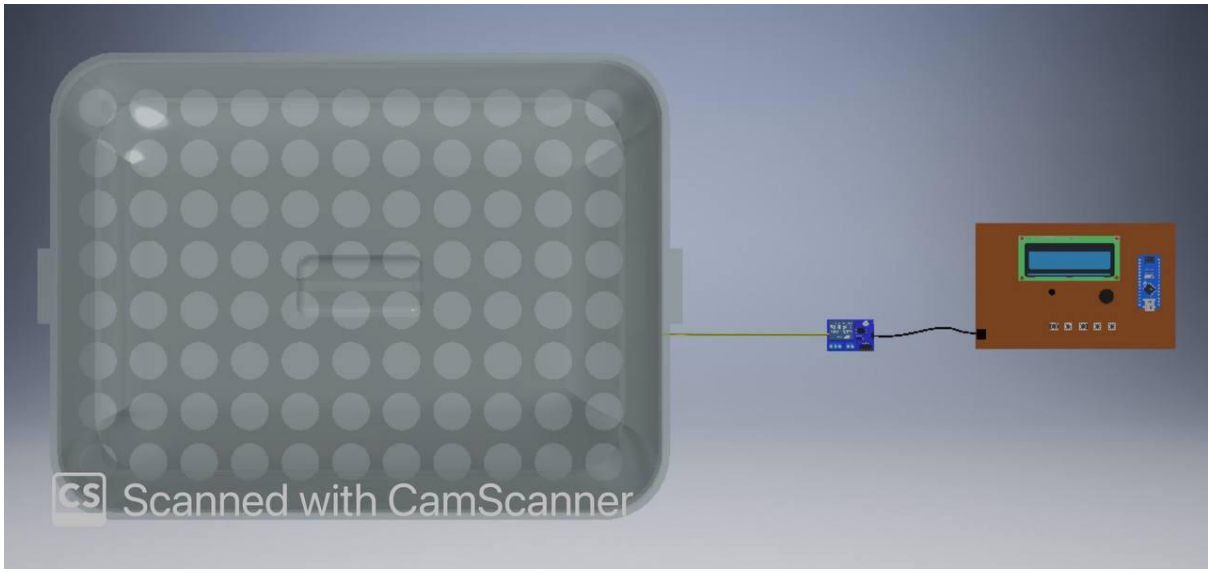
LEFT SIDE



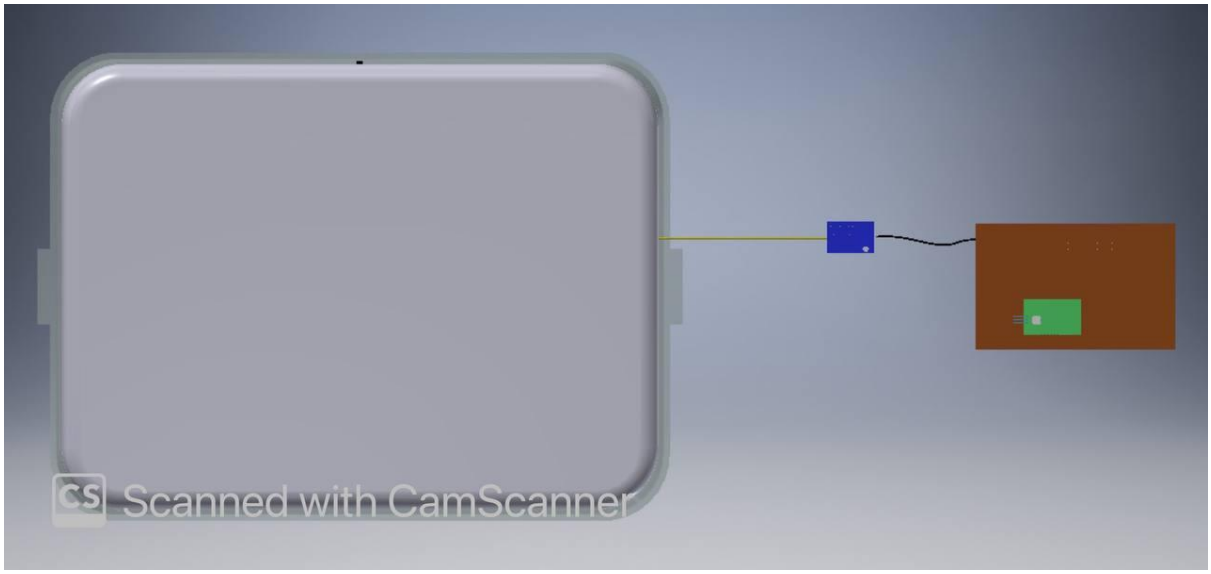
RIGHT SIDE



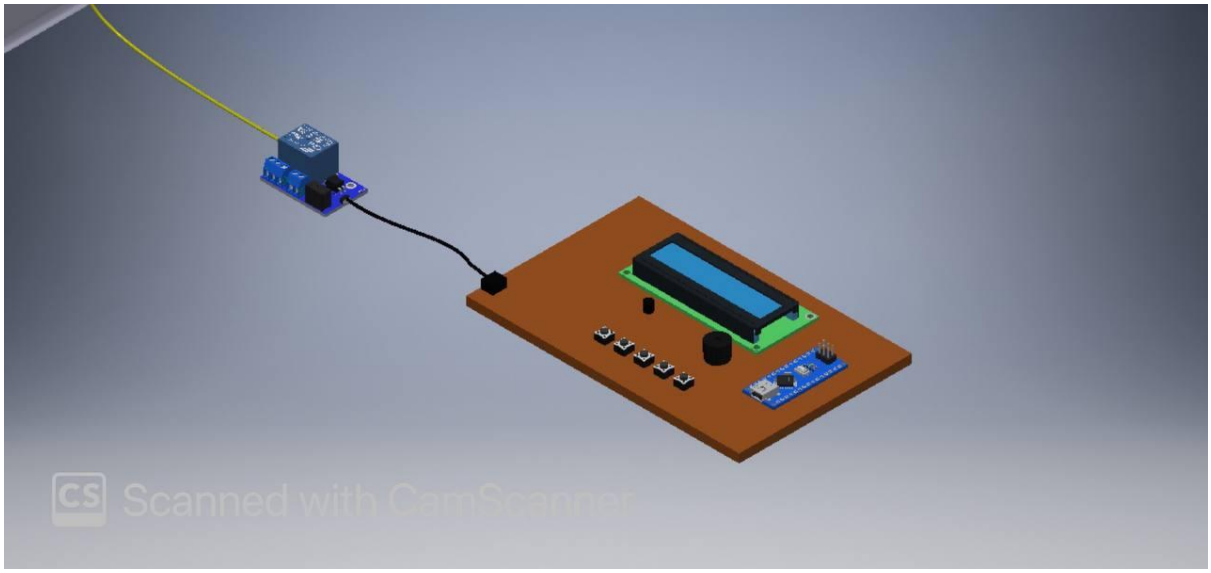
TOP SIDE



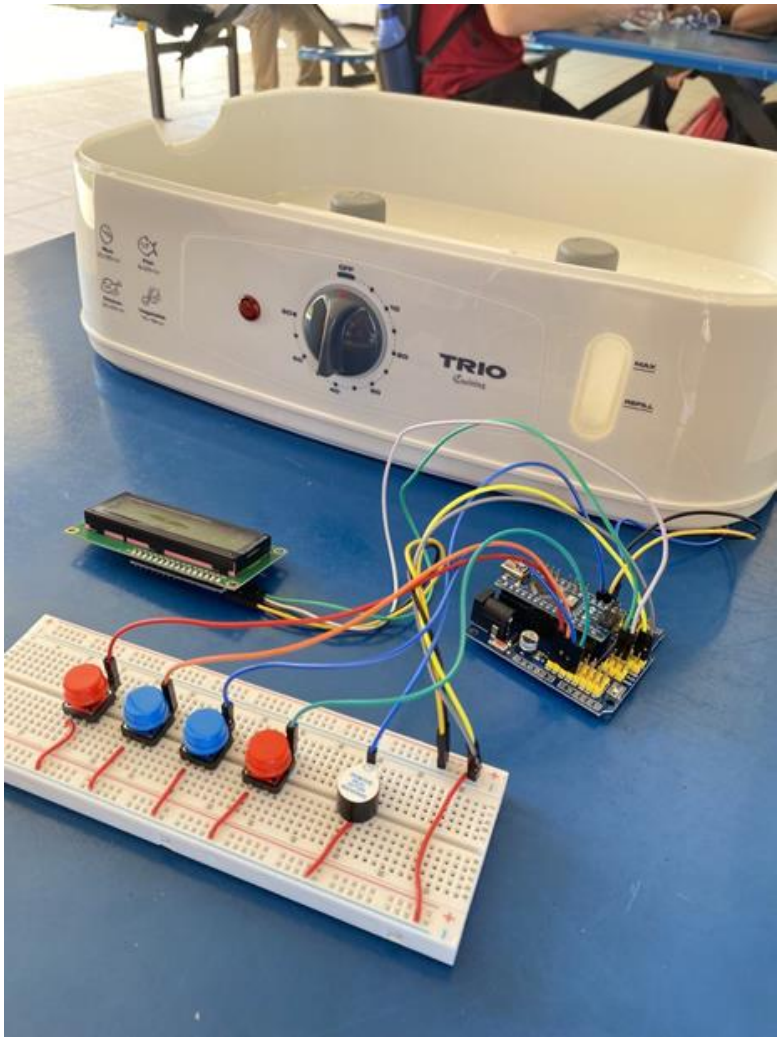
BOTTOM SIDE



ARDUINO BASED COUNTDOWN TIMER



4.4 FINISHED PRODUCT



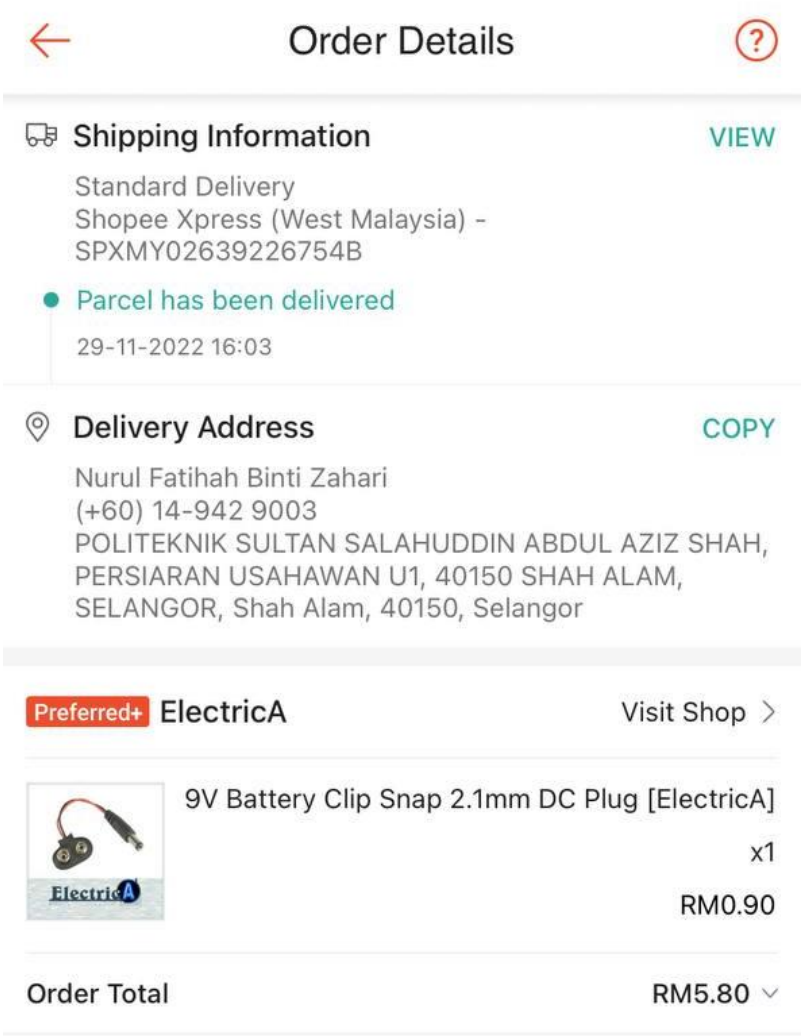
4.5 BILLS OF MATERIAL AND COSTING

MATERIAL	QUANTITY	PRICE
Arduino Nano + cable	1	RM 38.90
Piezo Buzzer 5v	1	RM 0.60
Push Button	4	RM 0.25
LCD Display 16x2	1	RM 12.90
Steamer food Trio	1	RM 199
Relay 5v	1	RM 3.90
Breadboard (Large)	1	RM3.80
9V Battery Clip Snap 2.1mm DC Plug (Connecter)	1	RM 5.80
Jumper wire (male to female)	1	RM 3.20
Jumper wire (female to female)	1	RM 3.20
Battery 9v	1	RM 4.95
		TOTAL : RM 276.5

4.5.1 THE PROCESS OF PURCHASING MATERIALS AND COMPONENT

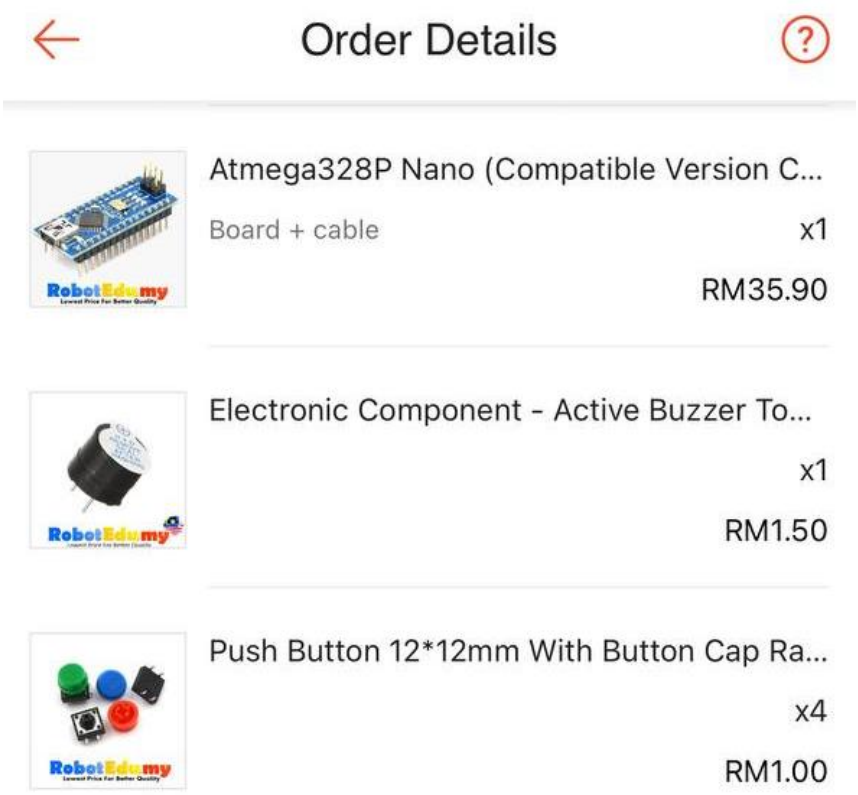
1) Food Steamer

2) 9V Battery Connecter



3) Relay 5v
4) LCD Display 16x2

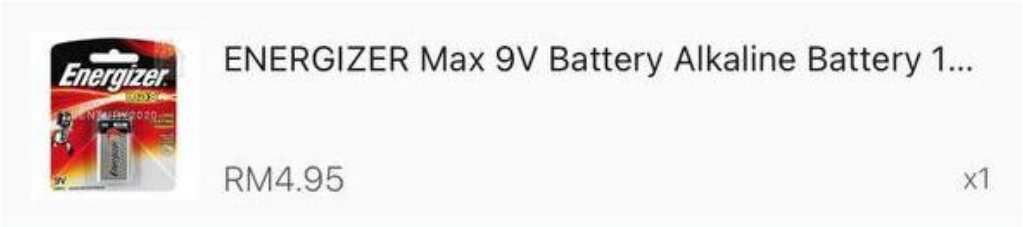
5) Arduino Nano
6) Piezo Buzzer
7) Push Button



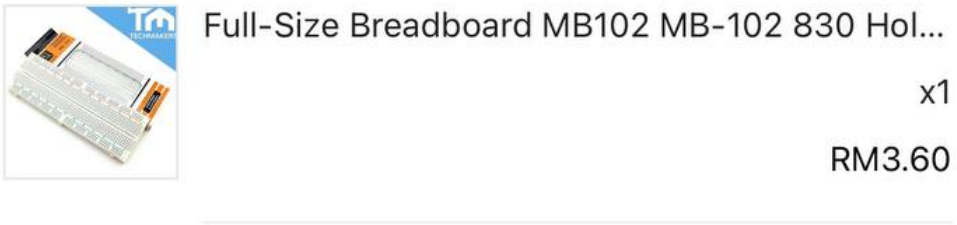
8) Jumper Wire (Female to Female)

9) Jumper Wire (Male to Female)

10) Battery 9V



11) Breadboard



CONCLUSION

In conclusion, our proprietary technology is the Smart Food Steamer. For increased convenience and security, it incorporates an easy-to-use time control panel. Additionally, because it can simultaneously cook different meals in different stages, the smart food steamer can save users time and energy. Nutrients in food will be activated while steaming food, as I mentioned at the beginning of the conversation before. Therefore, when we steam cook our meal, it turns out flawlessly and retains its maximum nutritional value. The Smart Food Steamer, which now has two control panels, will allow us to make better-quality and more productive steamer pots in the future. Furthermore, it can spare the customer money that would otherwise be needed to fix a damaged time control panel on a steamer.

LOG BOOK REPORT PROJECT 2

PROJECT ACTIVITY PLANNER (GANTT CHART PROJECT 1)

WEEK / ACTIVITIES		1	2	3	4	5	6	7	8	9	10	11	12	13	14
SUPERVISOR SELECTION	PLAN														
	ACTUAL														
IDEA AND PROJECT SEARCH	PLAN														
	ACTUAL														
PROPOSAL DEVELOPMENT	PLAN														
	ACTUAL														
TITLE SELECTION	PLAN														
	ACTUAL														
PROPOSAL PRESENTATION	PLAN														
	ACTUAL														
METHODOLOGY RESEARCH/SURVEY ON PRESENT INDUSTRY(FEASIBLITY)	PLAN														
	ACTUAL														
FINAL PRESENTATION	PLAN														
	ACTUAL														

PROJECT ACTIVITY PLANNER (GANTT CHART PROJCT 2)

CARTA GANTT : PERANCANGAN DAN PELAKSANAAN PROJEK PELAJAR

SESI : 1 : 2022/2023
JABATAN: JKM
KODKURSUS: DJJ50193
TAJUK PROJEK : SMART FOOD STEAMER WITH ARDUINO BASED COUNTDOWN TIMER

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Freelance Software Company