UNIVERSITI UTARA MALAYSIA

SEMESTER A211 SESSION 2021/2022

SKIP1013 GROUP A
INTRODUCTION TO PROGRAMMING AND PROBLEM SOLVING

TOPIC OF ASSIGNMENT:

FOOD/DRINKS

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DATE OF SUBMISSION

26 DECEMBER 2021

KAAMINI A/P KULANTHLU	288355	BREAD

1.Identify the problem

What is bread?

read is a staple food prepared from a dough of flour (usually wheat) and water, usually by baking. Throughout recorded history and around the world, it has been an important part of many cultures' diet. It is one of the oldest human-made foods, having been of significance since the dawn of agriculture, and plays an essential role in both religious rituals and secular culture.

Bread may be leavened by naturally occurring microbes (e.g. sourdough), chemicals (e.g. baking soda), industrially produced yeast, or high-pressure aeration, which creates the gas bubbles that fluff up bread. In many countries, commercial bread often contains additives to improve flavour, texture, colour, shelf life, nutrition, and ease of production.

Types of Bread

Bread is the staple food of the Middle East, Central Asia, North Africa, Europe, and in European-derived cultures such as those in the Americas, Australia, and Southern Africa. This is in contrast to parts of South and East Asia, where rice or noodles are the staple. Bread is usually made from a wheat-flour dough that is cultured with yeast, allowed to rise, and finally baked in an oven. The addition of yeast to the bread explains the air pockets commonly found in bread. Owing to its high levels of gluten (which give the dough sponginess and elasticity), common or bread wheat is the most common grain used for the preparation of bread, which makes the largest single contribution to the world's food supply of any food.

Bread is also made from the flour of other wheat species (including spelt, emmer, einkorn and kamut). Non-wheat cereals including rye, barley, maize (corn), oats, sorghum, millet and rice have been used to make bread, but, with the exception of rye, usually in combination with wheat flour as they have less gluten. Gluten-free breads are made using flours from a variety of ingredients such as almonds, rice, sorghum, corn, legumes such as beans, and tubers such as cassava. Since these foods lack gluten, dough made from them may not hold its shape as the loaves rise, and their crumb may be dense with little aeration. Additives such as xanthan gum, guar gum, hydroxypropyl methylcellulose (HPMC), corn starch, or eggs are used to compensate for the lack of gluten.

How Breads are made?

Doughs are usually baked, but in some cuisines breads are steamed (e.g., mantou), fried (e.g., puri), or baked on an unoiled frying pan (e.g., tortillas). It may be leavened or unleavened (e.g. matzo). Salt, fat and leavening agents such as yeast and baking soda are common ingredients, though bread may contain other ingredients, such as milk, egg, sugar, spice, fruit (such as raisins), vegetables (such as onion), nuts (such as walnut) or seeds (such as poppy). Methods of processing dough into bread include the straight dough process, the sourdough process, the Chorleywood bread process and the sponge and dough process.

2.Understand the problem

The problem here is bakers cannot satisfy the consumers as different people need different ingredients for their bread with fixed recipes. The business rate is reducing because people don't like the common recipe that all the companies follow as it is boring and unhealthy. Bakers find it hard to ask one by one from the customers as it requires a lot of time. For example, senior citizens and diabetes patients need less carbohydrates and sugar. People who are conscious of their health try to reduce intake of white flour and need a lot of fibre. Sometimes, the customers cannot buy the bread as the price is not affordable for some people because some of the ingredients are higher in price.

Problems Faces by the Bread Industry

- **Staffing Weaknesses of a Bakery**
  Your employees are the face of the bakery to your customers and employees are one of the many problems encountered in bakery business models. Employees who can't answer questions about ingredients for the breads and cakes, about why your bakery is better than the competition or why using real cream, eggs and butter creates a superior product, results in lost sales.
- **Operations and Cleanliness**
  Bakeries are inspected and graded by county or state health authorities. Those grades are usually placed where customers can see them. A lower grade impacts the customer's perception of the quality of your bakery. Serious infractions may cause the bakery to close until the problem is fixed. Poorly operated bakeries waste ingredients and labour, increasing expenses and lowering profit margins.
- **Bakery Marketing Challenges**
  "Bake it and they will come" doesn't work in real life, only in the movies. You may think that your baked goods will sell themselves, but unless you let customers know about your bakery, no one will be eating your pastries. A non-existent marketing plan is a weakness of a bakery. Use social media to develop a list of friends, groups and followers. Announce specials, new breads and recipes through the social media sites as well as on your bakery's blog or website. Create contests to name a new muffin or bagel, awarding the winner a week's free supply.

3.Identify alternative ways to solve the problem

- A system that helps the customer to customise their recipe for bread during order.
- A system that show various option of ingredients where the consumers can choose.
- A system where customers can choose the ingredients they can afford.

4. Select the best way to solve the problem from the list of alternative solutions.

A system that helps the customer to customise their recipe for bread during order.

5.List instructions (steps) that enable you to solve the problem using the selected solution

a) System ask for users' personal details.

Name	KAAMINI
Age	19
Address	CAMERONHIGHLANDS
Contact Number	01114940211
Medical Condition	NO

b) System print all the details inserted.
c) System ask user to choose type of flour.

Rice Flour(100g)	RM0.50
Wheat Flour(100g)	RM0.80
Wholemeal(100g)	RM1.00
Mixed Grains(100g)	RM1.20

d) System ask for the amount of flour.

Amount Available	100g,200g,500g

e) System calculate price of flour chose and display the amount

Price of Flour	Calculations
totalflr	priceflr*amountflr/100

f) System ask user to input amount of milk.

Amount Available	200ml,300ml,400ml

g) System show the price of milk user wanted.

Price of Milk	Calculations
priceMilk=0.80	amountmilk *priceMilk/100

h) System show the total price of flour and milk.

Total flour + milk	Calculations
totalflr1	totalflr + (amountmilk*priceMilk)/100

i) System ask user to input amount of sugar.

Amount Available	100g,200g,300g

j) System calculate the price of sugar and show

Price of Sugar	Calculations
priceSugar=0.30	amountsugar *priceSugar/100

k) System show the total price of sugar, flour and milk.

Total flour + milk +sugar	Calculations
totalflr2	totalflr1 + (amountsugar * priceSugar)/100

l) System ask user for flavour.

Plain	RM0.10
Chocolate	RM0.20
Vanilla	RM0.20
Butterscotch	RM0.50

m) System ask user to choose toppings

Raisins	RM0.40
Chocolate Chips	RM0.50
Nuts	RM0.30
Purple Grains	RM0.60

n) System will calculate and show price of a customised bread.

Total Bread	Calculations
totalbread	totalflr2 + priceflvr + pricetoppings

o) System will ask user for the quantity of bread.

p) System will calculate total amount of bread and total price

Quantity Bread	Calculations
quantity	quantity*totalbread

q) System ask user to pay in counter.

r) System end.

6. Evaluate the solution

This system enable user to customize their daily bread so that it can fulfil their taste and help them choose the ingredients according to their affordability. This system also help user to calculate their own price of bread as they can see the prices of ingredients. By this way, they will not feel that they got scammed or overpriced. Sometimes, certain flavour of breads are limited and the user cannot get the same bread as they finis so quickly. Using this system, they can get the same type bread as much as they want anytime.

7.Algorithm

1.Start

2.Enter name, age, address, contact number and medical condition.

3.Enter price of flour

4.Enter amount of flour

5.Calculate the price of flour entered using formula

6.Enter the amount of milk.

7.Calculate the price of milk entered

8.Calculate the total price for flour and milk

9.Enter the amount of sugar

10.Calculate the price of sugar entered.

11.Calculate the total price for flour, sugar and milk

12.Enter the type of flavour

13.Enter the type of toppings

14.Calculate the total price of bread

15.Enter the quantity of bread

16.Calculate the final price of order

17.Finish

8. Pseudocode

Start

Enter the name

Enter the age

Enter the address

Enter the contact number

Enter the medical condition

Display the personal details

Display the type and price of flour

Enter the price of flour

Display the price of flour chose

Enter the amount of flour

Display the amount of flour entered

Calculate the total price of flour
*totalflr= priceflr*amountflr/100*

Display the amount available for milk(ml)

Enter the amount of milk

Calculate the total price of milk
Total = *amountmilk*priceMilk/100*

Display the total price of milk chose

Calculate the total price of flour and milk
*totalflr1 = totalflr + (amountmilk*priceMilk/100)*

Display the amount available for sugar(gram)

Enter the amount of sugar

Calculate the total price of sugar
Total = *amountsugar *priceSugar/100*

Display the total price of sugar chose

Calculate the total price of flour, milk and sugar

*totalflr2 = totalflr1 + (amountsugar*priceSugar/100)*

Display the type and price of flavour

Enter the price of flavour

Enter the price of toppings

Calculate the total price of bread

totalbread = totalflr2 + priceflvr + pricetoppings

Enter the quantity of bread

Display the quantity of bread entered

Calculate the final price of the order

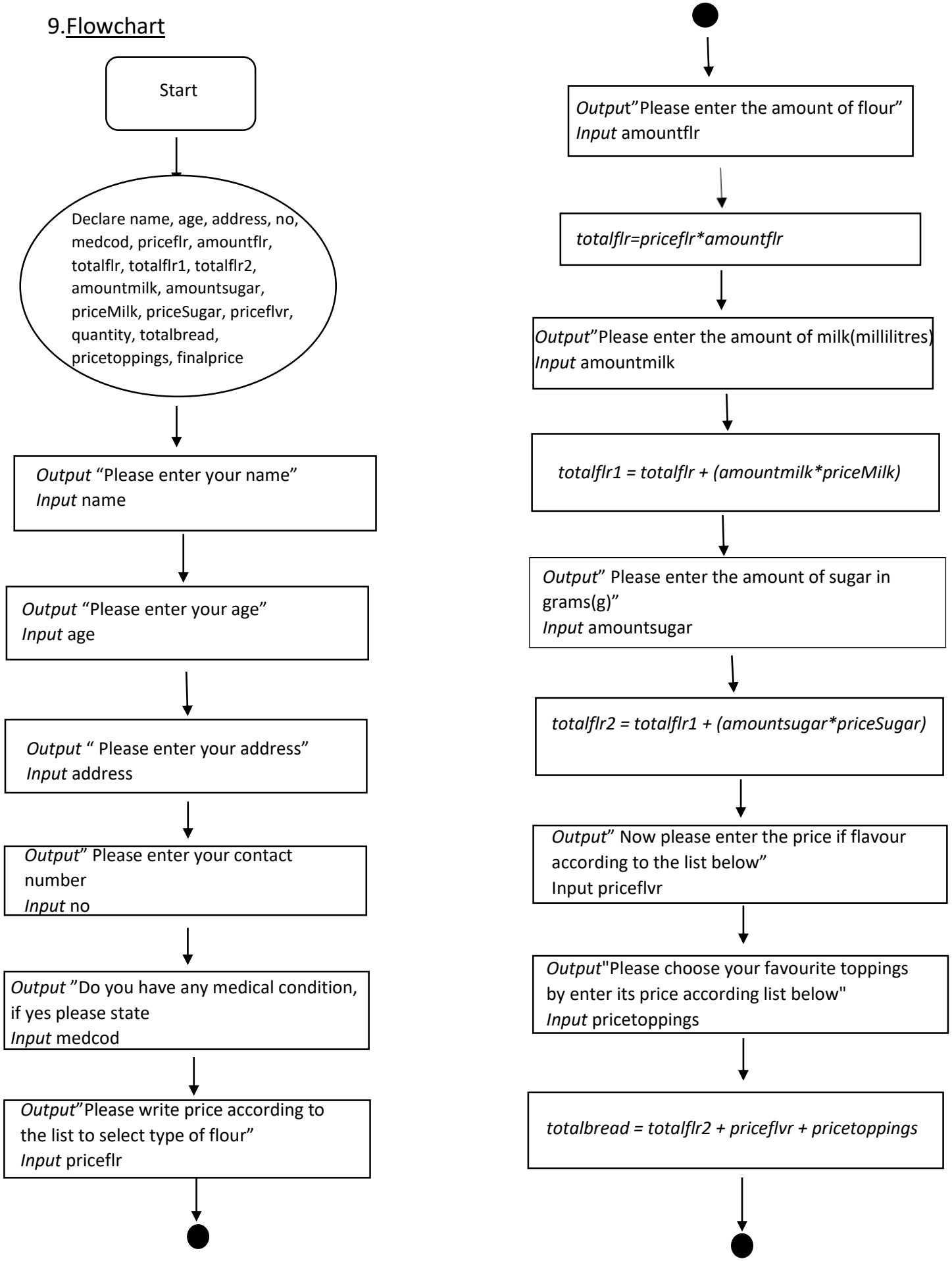
*finalprice = quantity*totalbread*

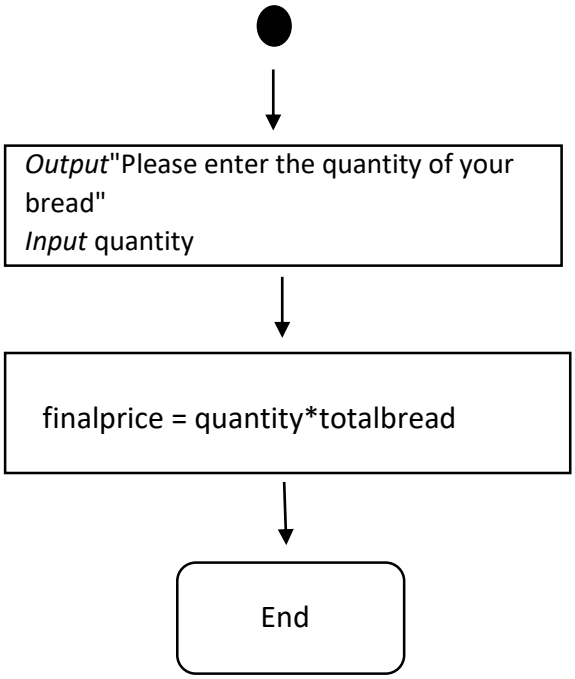
Display the final price of the order

Display to pay in counter

End

9.Flowchart


Start
Declare name, age, address, no, medcod, priceflr, amountflr, totalflr, totalflr1, totalflr2, amountmilk, amountsugar, priceMilk, priceSugar, priceflvr, quantity, totalbread, pricetoppings, finalprice
Output "Please enter your name"
Input name
Output "Please enter your age"
Input age
Output " Please enter your address"
Input address
Output" Please enter your contact number
Input no
Output "Do you have any medical condition, if yes please state
Input medcod
Output"Please write price according to the list to select type of flour"
Input priceflr
Output"Please enter the amount of flour"
Input amountflr
totalflr=priceflr*amountflr
Output"Please enter the amount of milk(millilitres)
Input amountmilk
totalflr1 = totalflr + (amountmilk*priceMilk)
Output" Please enter the amount of sugar in grams(g)"
Input amountsugar
totalflr2 = totalflr1 + (amountsugar*priceSugar)
Output" Now please enter the price if flavour according to the list below"
Input priceflvr
Output"Please choose your favourite toppings by enter its price according list below"
Input pricetoppings
totalbread = totalflr2 + priceflvr + pricetoppings


Output"Please enter the quantity of your bread"
Input quantity
finalprice = quantity*totalbread
End

10.Coding

```java
package Bread;
import java.util.Scanner;
class Assignment {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        //Declare all the variable

        String name;
        int age;
        int no;
        String address;
        String medcod;
        double priceflr;
        double amountflr;
        double totalflr,totalflr1,totalflr2;
        double amountmilk;
        double amountsugar;
        double priceMilk = 0.80;
        double priceSugar= 0.30 ;
        double priceflvr;
        double quantity;
        double totalbread;
        double pricetoppings;
        double finalprice;

        Scanner scan = new Scanner (System.in);
         // Input personal data
        System.out.println("************Hello Welcome to UUM Star Bakery***************");
        System.out.println("Please enter your name");
        name = scan.next();
        System.out.println("Please enter your age");
        age = scan.nextInt();
        System.out.println("Please enter your address");
        address = scan.next();
        System.out.println("Please enter your contact number");
        no = scan.nextInt();
        System.out.println("Do you have any medical condition,if yes please state");
        medcod = scan.next();
        System.out.println("Your details :");
        System.out.println("Name :" + name);
        System.out.println("Age : " + age);
        System.out.println("Address : " + address);
        System.out.println("Contact number : " + no);
        System.out.println("Medical Condition : " + medcod);
        //showing the offer
        System.out.println("////////////////////////////////////////////////////////////////////////////");
        System.out.println("Here are the types of the flour to be chosen");//flour price
        System.out.println("Please write price according to the list to select type of flour");
        System.out.println("*************************************************************************");
        System.out.println("1. Rice Flour(100g)          RM 0.50 ");
        System.out.println("2. Wheat Flour(100g)         RM 0.80 ");
        System.out.println("3. Wholemeal(100g)           RM 1.00 ");
        System.out.println("4. Mixed Grains(100g)        RM 1.20 ");
        System.out.println("*************************************************************************");
        priceflr = scan.nextDouble();
        System.out.println("You choose : RM " + priceflr);
        System.out.println("Please enter the amount of flour");//flour amount
        System.out.println("Amount available : 100g,200g,500g");
        amountflr = scan.nextDouble();
        System.out.println("The amount of flour you entered : " + amountflr);
        totalflr = priceflr*amountflr/100;
        System.out.printf("The total amount of flour price is RM %.2f" ,totalflr );
        System.out.println(" ");
        System.out.println("Please enter the amount of milk in millilitres(ml)");
        System.out.println("Amount of milk available : 200ml,300ml,400ml");
        amountmilk = scan.nextDouble();
        System.out.println("The price of milk is RM " + (amountmilk *priceMilk/100));
        totalflr1 = totalflr + ((amountmilk*priceMilk)/100);//amount of flour and sugar
        System.out.printf("The total price of flour and milk is RM %.2f" ,totalflr1);
        System.out.println("");
        System.out.println("Please enter the amount of sugar in grams(g)");
        System.out.println("The amount of sugar available : 100g,200,300g");
        amountsugar = scan.nextDouble();
        System.out.printf("The price of sugar is RM %.2f " ,(amountsugar *priceSugar/100));
        System.out.println("");
        totalflr2 = totalflr1 + ((amountsugar * priceSugar)/100);//amount of flour,sugar and milk
        System.out.printf("The total price of flour,milk and sugar is RM %.2f" ,totalflr2);
        System.out.println("");
```

```
System.out.println("Now please enter the price of flavour according to list below");//flavour price
System.out.println("*********************************************************************************");
System.out.println(" 1. Plain             RM 0.10");
System.out.println(" 2. Chocolate         RM 0.20");
System.out.println(" 3. Vanilla           RM 0.20");
System.out.println(" 4. Butterscotch      RM 0.50");
System.out.println("*********************************************************************************");
priceflvr = scan.nextDouble();
System.out.printf("You chose : RM %.2f" , priceflvr);
System.out.println("");
System.out.println("Please choose your favourite toppings by enter its price according list below");//
System.out.println("*********************************************************************************");
System.out.println(" 1. Raisins           RM 0.40");
System.out.println(" 2. Chocolate Chips   RM 0.50");
System.out.println(" 3. Nuts              RM 0.30");
System.out.println(" 4. Purple Grains     RM 0.60");
System.out.println("*********************************************************************************");
pricetoppings = scan.nextDouble();
System.out.printf("You price of the toppings is RM %.2f" , pricetoppings);
System.out.println("");
totalbread = (totalflr2 + priceflvr + pricetoppings);
System.out.printf("The total price of your bread : RM %.2f" ,totalbread);
System.out.println(" ");
System.out.println("/////////////////////////////////////////////////////////////////////////////////");
System.out.println("Please enter the quantity of your bread");//quantity bread
quantity = scan.nextDouble();
System.out.println("The quantity of your bread is "+ quantity);
finalprice = quantity*totalbread;//price without discount
System.out.printf("Your total price : RM %.2f " ,finalprice);
System.out.println("");
System.out.println("Please pay at the counter");
System.out.println("*******************************Thank You For Visiting Us************************");
System.out.println("*********************************Please Come Again*****************************");

```

11.Output

```
**********Hello Welcome to UUM Star Bakery***************
Please enter your name
Kaamini
Please enter your age
19
Please enter your address
CameronHighlands
Please enter your contact number
01114940211
Do you have any medical condition,if yes please state
No
Your details :
Name :Kaamini
Age : 19
Address : CameronHighlands
Contact number : 1114940211
Medical Condition : No
////////////////////////////////////////////////////////////////////////////////////////
Here are the types of the flour to be chosen
Please write price according to the list to select type of flour
*********************************************************************************************
1. Rice Flour(100g)         RM 0.50
2. Wheat Flour(100g)        RM 0.80
3. Wholemeal(100g)          RM 1.00
4. Mixed Grains(100g)       RM 1.20
*********************************************************************************************
1.20
You choose : RM 1.2
Please enter the amount of flour
Amount available : 100g,200g,500g
100
The amount of flour you entered : 100.0
The total amount of flour price is RM 1.20
Please enter the amount of milk in millilitres(ml)
Amount of milk available : 200ml,300ml,400ml
300
The price of milk is RM 2.4
The total price of flour and milk is RM 3.60
Please enter the amount of sugar in grams(g)
The amount of sugar available : 100g,200,300g
300
The price of sugar is RM 0.90
The total price of flour,milk and sugar is RM 4.50
Now please enter the price of flavour according to list below
*********************************************************************************************
 1. Plain             RM 0.10
 2. Chocolate         RM 0.20
 3. Vanilla           RM 0.20
 4. Butterscotch      RM 0.50
*********************************************************************************************
0.20
You chose : RM 0.20
Please choose your favourite toppings by enter its price according list below
*********************************************************************************************
 1. Raisins           RM 0.40
 2. Chocolate Chips   RM 0.50
 3. Nuts              RM 0.30
 4. Purple Grains     RM 0.60
*********************************************************************************************
0.60
You price of the toppings is RM 0.60
The total price of your bread : RM 5.30
/////////////////////////////////////////////////////////////////////////////////////////////
Please enter the quantity of your bread
2
The quantity of your bread is 2.0
Your total price : RM 10.60
Please pay at the counter
*****************************Thank You For Visiting Us*************************************
*********************************Please Come Again*****************************************
```

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NUR SUHAILA BINTI YEOP	288383	CAKE

1. Identify the problem

Initially, cake is actually a bread- like shape and taste but sweetened with honey during the ancient time. Nevertheless, due to the Industrial Revolution in middle of 19th century, the cake is made of a mixture of flour, egg, sugar, butter or oil, baking soda, vanilla extract and other additional ingredients to make it delicious. The word 'cake' is derivative from Old Norse's word located at Viking origin, called 'kaka'. At Greek period, cakes are known as 'plakous' derived from word 'plakoeis' which mean flat, meanwhile in ancient Roman, they called cake as 'placenta' which was derived from the Greek term. Surprisingly, ancient Egyptian is the first culture that prove their improvement in baking skill according to the food historian.

In ancient history, cake often made to serves the god and spirits at particular time on culture's ritual ceremony every year. For instance, during the harvest time, Chinese made cakes to honour their moon deity because they believe the moon hold an important task in seasonal cycle. Thus, they made a round-shape cake to imitate the moon shape to reward their goddess. Similarly, the action also performed by the ancient Celt, however they made cake called Beltane cake during Beltane festival on the first day of spring. Unlike Chinese, ancient Celt baked cakes which resemble the sun's shape and rolled it down a hill to emulate the movement of sun. They wish by executing this action, the sun will always continue to move.

Nevertheless, in this modern era, cake is frequently found at wedding ceremony, birthday party and Christmas occasion. At wedding ceremony, cake is crucial because it related to some of the culture activities that have its own meaning. For example, the action of cake cutting indicate the first activity done as a couple, even though historically the bride did this action alone to symbolize the loss of her virginity. And the meaning behind the groom and the bride feeding one other is to symbolize the love between them and the commitment that will be provided by each other. Furthermore, in birthday party, cake paired with the lit candle because they believe when they pray and blow the candle, the smoke will carry their prayers to the gods in the heavens.

There are variety of cakes out there starting with layer cake, butter cake, sponge cake, cupcake and flourless chocolate cake. All of these cakes are

available in many different flavours that give an opportunity for each person to choose their favourite flavour.

Layer cake is a type of cake that contain multiple layers of butter cake or sponge cake 1 inch to 2 inch height being separate by cream, frosting or other filling. Red velvet cake, black forest cake, chocolate cake and carrot cake filled with cream cheese are among the famous cakes that commonly served at wedding ceremony.

Sponge cake or foam cake is made from flour, egg white, sugar and baking powder. This cake does not have any fat in it since the ingredients have no fat. Normally, people will beat

the white egg with sugar and slowly add the flour inside the mixture until it expands. Sponge cake might not have different flavour, but usually people would decorate it with icing and fruits on top of it.

Butter cake clearly consist of butter as the main ingredient. Just like sponge cake, butter cake also needs to be whip. It starts with the mixing of sugar and butter followed by adding eggs one at a time. Uniquely, this type of cake is moist and luscious if it is kept at room temperature and become dry out plus lose flavour when we store it in fridge.

Flourless chocolate cake is made of butter, eggs, sugar, cocoa powder, vanilla, salt, and an optional dusting of powdered sugar. It starts with whip the white egg until it expands then whip the yolk with sugar. Then, put the additional ingredient inside it. This cake does not contain
flour at all. However, its texture is light because the action of whipping the egg can increase the air content inside it.

In this era, many cake shops are built to serve the people with their wanted cake since there are various type of cakes nowadays. Nevertheless, the increasing in waste, has made plenty of the cake shops realize the important of clean environment. Waste are materials that have be thrown away when it became worthless. There are four type of waste which are municipal waste includes household waste, commercial waste, and demolition waste, hazardous waste includes industrial waste, biomedical waste includes clinical waste, special hazardous waste includes radioactive waste, explosive waste, and electronic waste (e-waste).

Special Cake is one of the cake shops in Malaysia that show concern about this problem and they know that if no one in this country take action, then our country will face a big trouble in the future because the number of wastes will become higher. Thus, they think they need to take an approach by spreading awareness to people about this waste's problem. Therefore, people exposed to this issue and hopefully the amount of waste material will reduce.

However, they do not know how to disseminate the awareness since they have to consider many challenges such as the decrement of their profit and the chance of this campaign to success is unknown.

2. Understand the problem

Special Cake is a cake shop located at Sintok, Kedah. They are one of the shops in Malaysia that worry about the growth of waste material in this country. Hence, they want to educate the people about the significant of unpolluted environment. This aim of this method is to reduce the number of wastes in this country.

But, as a shop, Special Cake need to consider about the profit of sales and best method to educate the folks about waste and how to overcome it. Without a proper knowledge to solve this problem, Special Cake may suffer a loss in business. Its need to find a finest solution that can gain its profit and at the same time success in encouraging the people to decrease the waste in their daily routine.

3. Identify alternative ways to solve the problem

i. Special Cake's team must use an environmentally friendly materials to pack their foods such as cupboard, bagasse paper, and aluminium. This is because environmentally friendly materials are easy to recycle and decompose.

ii. Special Cake's team may write a short message to spread the fundamental knowledge about the important of waste reduction on receipt.

iii. The baker can reduce the food waste while making the cake by practicing accurate measurement and baking skills.

iv. The owner of Special Cake can provide discount on National Recycling Day (11 November) and Global Recycling Day (18 March) every year.

v. The baker can plan enough amounts of cupcakes to bake in a day to prevent food waste.

vi. At the front door of the shop, a Special Cake's member can paste a poster about the facts of waste in this world, thus the customer will have a chance to read it.

vii. Special Cake's team need to implement a recycling habit while working, as a consequence, customer affected to follow the habit.

viii. Special Cake's team need to design a new decoration based on the waste disposal theme that include the tips to recycle on their packaging materials.

ix. Special Cake's team can create a contest to encourage their customer to apply the recycle habit in their life. And as a reward for their participation, Special Cake's team can give 5% off in their purchase.

x. Special Cake's team should hold a No Plastic Bag Day every one a week to prevent more waste on plastic bag.

xi. Special Cake's team can provide recycle bins outside their shop to attract people attention and develop their interest to start recycle.

4. Select the best way to solve the problem from the list of alternative solutions.

The best way to deal with this problem is Special Cake's team must use an environmentally friendly materials to pack their product such as paper bag, container and friendly bag.

5. List instructions (steps) that enable you to solve the problem using the selected solution.

1. Program will ask the customer to fill the needed information such as:
- Customer's name
- Customer's location
- Contact number
- Date of order
- Date to receive the cake

2. The program will show the menu of cake provided and its price to the customer. Then, customer may choose their favourite cake based on 3 category:

1. Menu of Special Choose –

This menu particularly for customer that want to choose a cake for their birthday party, wedding ceremony or just for a casual event. Customers can see the detail of the cakes including it weight, height and size. There are 3 types of techniques used to make the cake whether bake or steam or mixed with ice cream (known as ice cream cake). Customer also will see the price for each cake.

At some part like size of cake, height of cake, type of cake and name of cake customer need to input the code of the cake. This action is used to make sure customer feel easy when using this program.

Size (inch) [code]	**Weight (kg)**	**Height (inch) [code]**	**Type [code]**	**Name [code]**	**Price (RM)**

6	0.7	5	Bake/40	Tiramisu/9 New York Cheese Cake/10 Black Forest/11 Caramel Cream/7 Oreo Cake/8 Old Fashion Chocolate Cake/12 Tiramisu	94 100 106 82 88 112 96
				New York Cheese Cake	102

			Steam/42	Black Forest Caramel Cream Oreo Cake Old Fashion Chocolate Cake	108 84 90 114
			Ice cream/ 60	Tiramisu New York Cheese Cake Black Forest Caramel Cream Oreo Cake Old Fashion Chocolate Cake	114 120 126 104 108 132

8	1.3	5	Bake	Tiramisu New York Cheese Cake Black Forest Caramel Cream Oreo Cake Old Fashion Chocolate Cake	112 120 128 96 104 136
			Steam	Tiramisu New York Cheese Cake Black Forest Caramel Cream Oreo Cake Old Fashion Chocolate Cake	114 122 130 98 106 138
			Ice cream	Tiramisu New York Cheese Cake Black Forest Caramel Cream Oreo Cake Old Fashion Chocolate Cake	132 140 148 116 124 136

2. Menu of Special Cupcake –

There are 2 size available for cupcake which are 2 inch and 2.5 inch. All the detail are shown in the table below.

Size (inch)	**Weight (kg)**	**Height (inch)**	**Type [code]**	**Name [code]**	**Price (RM)**
2 [2]	0.08	1.5	Bake [1]	Banana [1.5] Carrot [2.5] Chocolate [1] Vanilla [0.5]	4 6 3 2
			Steam [1.5]	Banana [1.5] Carrot [2.5] Chocolate [1] Vanilla [0.5]	4.5 6.5 3.5 2.5
			Ice cream [1]	Banana [1.5] Carrot [2.5] Chocolate [1] Vanilla [0.5]	5 7 4 3
2 .5 [2.5]	0.08	1.5	Bake [1]	Banana [1.5] Carrot [2.5] Chocolate [1] Vanilla [0.5]	4.75 7.25 3.5 2.25

			Steam [1.5]	Banana [1.5] Carrot [2.5] Chocolate [1] Vanilla [0.5]	5.25 7.75 4 2.75
			Ice cream [1]	Banana [1.5] Carrot [2.5] Chocolate [1] Vanilla [0.5]	5.75 8.25 4.5 3.25

3. Menu of Special Slice –

For slice of cake, customer have limited options. They only can choose the name of cake that they want. But, they still need to input the data of the cake such as size of cake and type of cake that they want.

Size [code]	**Shape**	**Height (inch)**	**Type [code]**	**Name [code]**	**Price (RM)**
2 [2]	Triangle	5	Baked [10]	Burnt Cheese Cake	10
				Red Velvet	10
				Rainbow	10
				Creamy Vanilla Fruit Cake	10
				Chocolate Truffle Cream Cake	10

				Classic Almond Cake	10

3. After looking at the menu given, customer should answer the given question including: - Size of the cake
- Name of the cake
- Type of the cake
- Amount of cake

4. Then, the menu of packaging materials based on category will be shown automatically after customer answer all the questions. There menu are divide into 3 category which are:

1. Menu of Special Choose' Packaging Materials –

Customer can choose cake stand or cake board as a packaging material. But customers are recommended to bring our-branded cake stand or cake board that they had bought before. They may choose material that they want to store the cake.

Type	**Height(inch)/ Shape**	**Decoration colour/Colour**	**Material**	**Price (RM)**
Cake Stand		White	Glass Clay Wood Aluminium	184 140 44 28

	4	Silver	Glass Clay Wood Aluminium	184 140 44 28

		Gold	Glass Clay Wood Aluminium	184 140 44 28
	5	White	Glass Clay Wood Aluminium	230 175 55 35
		Silver	Glass Clay Wood Aluminium	230 175 55 35
		Gold	Glass Clay Wood Aluminium	230 175 55 35
Cake Bound	Square/ Rectangle/ Round	White	Glass Clay Wood Aluminium	46 35 11 7
		Silver	Glass Clay Wood Aluminium	46 35 11 7

		Gold	Glass Clay Wood Aluminium	46 35 11 7

User Cake Stand/Board	from our-branded shop only	0

2. Menu of Special Cupcake Packaging's Material –

Type	**Height [code]**	**Material [code]**	**Price (RM)**
a box of 6 cupcakes	3[1]	Aluminium Foil [2] Bagasse Paper [3] Shop's Container [8] Customer's container [0]	2 3 8 0

3. Menu of Special Slice Packaging's Material–

Type	**Height [code]**	**Material [code]**	**Price (RM)**
a box of 2 slice	6[2]	Aluminium Foil [0.7] Bagasse Paper [0.5] Shop's Container [2] Customer's container [0]	1.4 1 4 0

5. Next, program will ask 3 questions question to the customer like:
- Type of packaging
- Height of packaging
- Material used to create the packaging material

6. Then, the program will do calculation based on

i. Price of one cake chosen by the customer
ii. Total price of cake
iii. Price of packaging chosen by the customer
iv. Total price to pay
v. Discount received
vi. Total price to pay

7. Lastly, the program will print the receipt to the customer. The details that include in the receipt are:
- Customer's name
- Date of order
- Date to pick up the order
- Code for cake's size
- Code for cake
- Code for type of cake
- Quantity of cake
- Type of packaging
- Code for packaging size
- Code for packaging material
- Subtotal
- Discount received
- Total payment

6. Evaluate the solution.

This is because they can use finest materials to pack the cake. So, they can charge extra price to customer because the material used to make their packaging container is quite expensive. By doing this, the Special Cake can increase their sale.

For some customer that enable to accept the price provide by the cake shop, they are encourage to bring their own container to pack the food. This method obviously can save the customer's money and without any hesitation, the Special Cake successfully attract people concern to reduce their daily waste.

7. Algorithm


Algorithm
ORDER A CAKE
1) FILL IN THE INFORMATION DETAIL
2) CHOOSE THE CAKE BASED ON MENU
3) CHOOSE THE PACKAGING MATERIAL
4) WAIT FOR PROGRAM TO DO CALCULATION
5) THE PROGRAM SHOW RECEIPT
Time for you to order

8. Pseudocode

Start
Print “Hi! Welcome to Special Cake”
Print “Please fill the information detail”
Print “Please state your name:”
Input name
Print “Please state your address location:”
Input address
Print “Please state your contact number:”
Input contact
Print “Please state the date of order:”
Input order
Print " Please state date to pick up (7 days after date of order): "
Input take
Print
“##”
Print “Here's the Menu of Our Shop”
Print “##”
Print “Category 1: Special Choose”
Print
“##”
Print “Size(inch) [code] Weight (kg) Height(inch) Type [code] Name [code] Price (RM)”
Print “Tiramisu [9] 94");
Print “New York Cheese Cake [10] 100");
Print “Baked [40] Black Forest [11] 106");
Print “Caramel Cream [7] 82”
Print “Oreo Cake [8] 88”
Print “Old Fashion Chocolate Cake [12] 112”
Print “Tiramisu [9] 96");
Print “New York Cheese Cake [10] 102”
Print “6 [6] 0.7 5 Steam [42] Black Forest [11] 108”
Print “Caramel Cream [7] 84");
Print “Oreo Cake [8] 90");
Print “Old Fashion Chocolate Cake [12] 114"); Print “Tiramisu [9 114");

Print “New York Cheese Cake [10] 120”
Print “Ice cream [60] Black Forest [11] 126”
Print “Caramel Cream [7] \t\t 104”
Print “Oreo Cake [8] \t\t\t 108”
Print “Old Fashion Chocolate Cake [12] 132” Print “##” Print “Tiramisu [9] 112”
Print “New York Cheese Cake [10] 120”
Print “Baked [40] Black Forest [11] 128”
Print “Caramel Cream [7] \t\t 96");
Print “Oreo Cake [8] 104”
Print “Old Fashion Chocolate Cake [12] 136” Print “Tiramisu [9] 114”
Print “New York Cheese Cake [10] 122”
Print “8[8] 1.3 5 Steam [42] Black Forest [11] 130” Print “Caramel Cream [7] 98”
Print “Oreo Cake [8] 106”
Print “Old Fashion Chocolate Cake [12] 138”
Print “Tiramisu [9] 132”
Print “New York Cheese Cake [10] 140”
Print “Ice cream [60] Black Forest [11] 148” Print “Caramel Cream [7] 116”
Print “Oreo Cake [8] 124”
Print “Old Fashion Chocolate Cake [12] 136” Print “##”
Print “##” Print “Category 2: Special Cupcakes”
Print “##”
Print “Size(inch) [code] Weight (kg) Height(inch) Type [code] Name [code] Price (RM)”
Print “Banana [1.5] 4”
Print “Carrot [2.5] 6”
Print “Baked [1] Chocolate [1.0] 3”
Print “Vanilla [0.5] 2”
Print “Banana [1.5] 4.5");
Print “Carrot [2.5] 6.5”

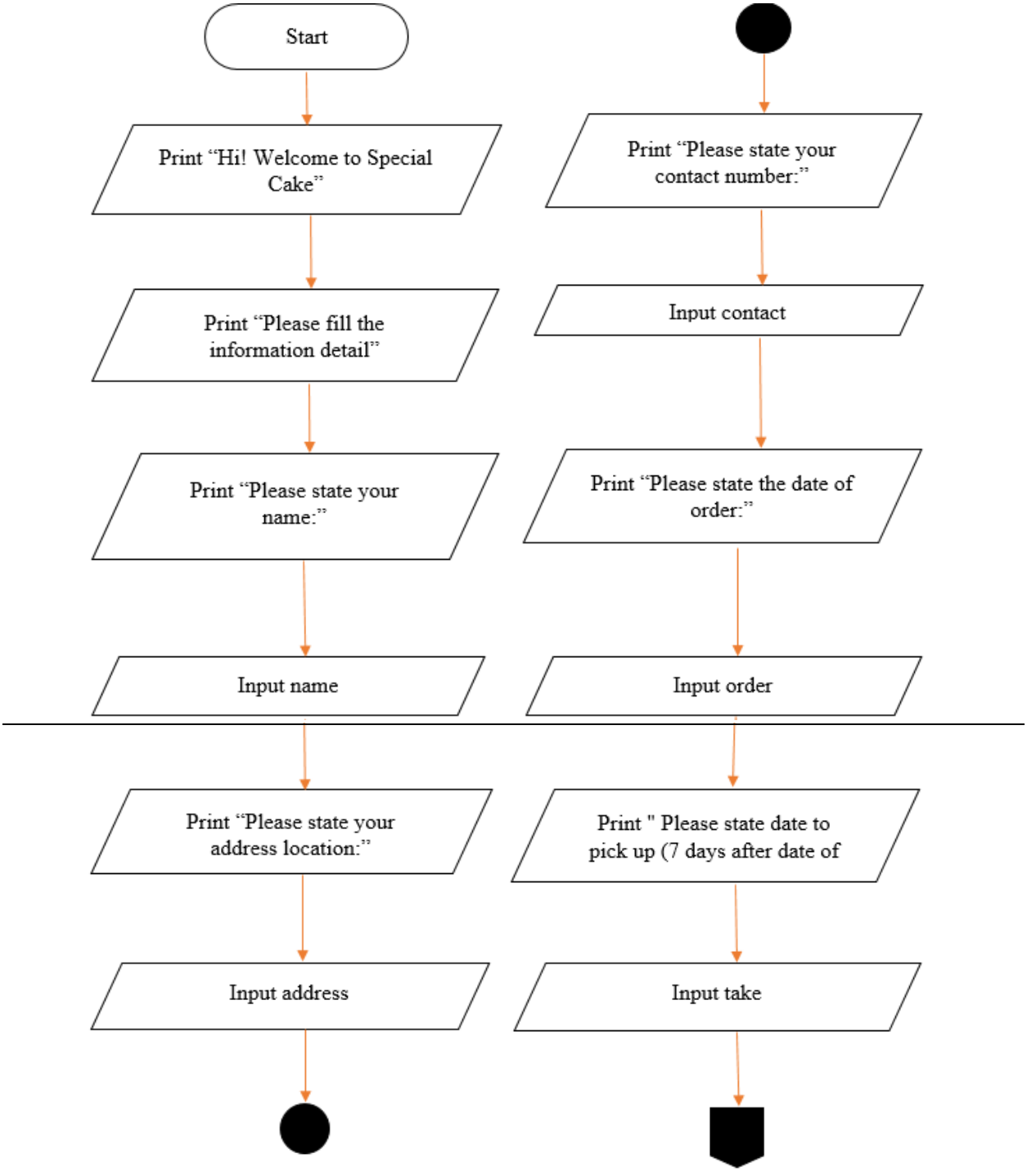
Print “2.0 [2] 0.08 1.5 Steam [1.5] Chocolate [1.0] 3.5” Print “Vanilla [0.5] 2.5”
Print “Banana [1.5] 5”
Print “Carrot [2.5] 7”
Print “Ice cream [1] Chocolate [1.0] 4”
Print “Vanilla [0.5] 3”
Print “##” Print “Banana [1.5] 4.75”
Print “Carrot [2.5] 7.25”
Print “Baked [1] Chocolate [1.0] 3.5”
Print “Vanilla [0.5] 2.25”
Print “Banana [1.5] 5.25”
Print “Carrot [2.5] 7.75”
Print “2.5[2.5] 0.08 1.5 Steam [1.5] Chocolate [1.0] 4” Print “Vanilla [0.5] 2.75”
Print “Banana [1.5] 5.75”
Print “Carrot [2.5] 8.25”
Print “Ice cream [1] Chocolate [1.0] 4.5”
Print “Vanilla [0.5] 3.25”
Print “##”
Print “##”
Print “##” Print “Category 3: Special Slice”
Print “##” Print “Size(inch) [code] Shape (kg) Height(inch) Type [code] Name [code] Price (RM)”
Print “Burnt Cheese [3] \t\t 10”
Print “Red velvet [4] 10”
Print “Triangular 5 Baked [10] Rainbow [15] 10” Print “Creamy Vanilla Fruit Cake [6] 10”
Print “Chocolate Truffle Cream Cake [13] 10”
Print “Classic Almond Cake [14] 10”
Print “##” Print “##”
Print “Which size do you want? (Please state the code):”

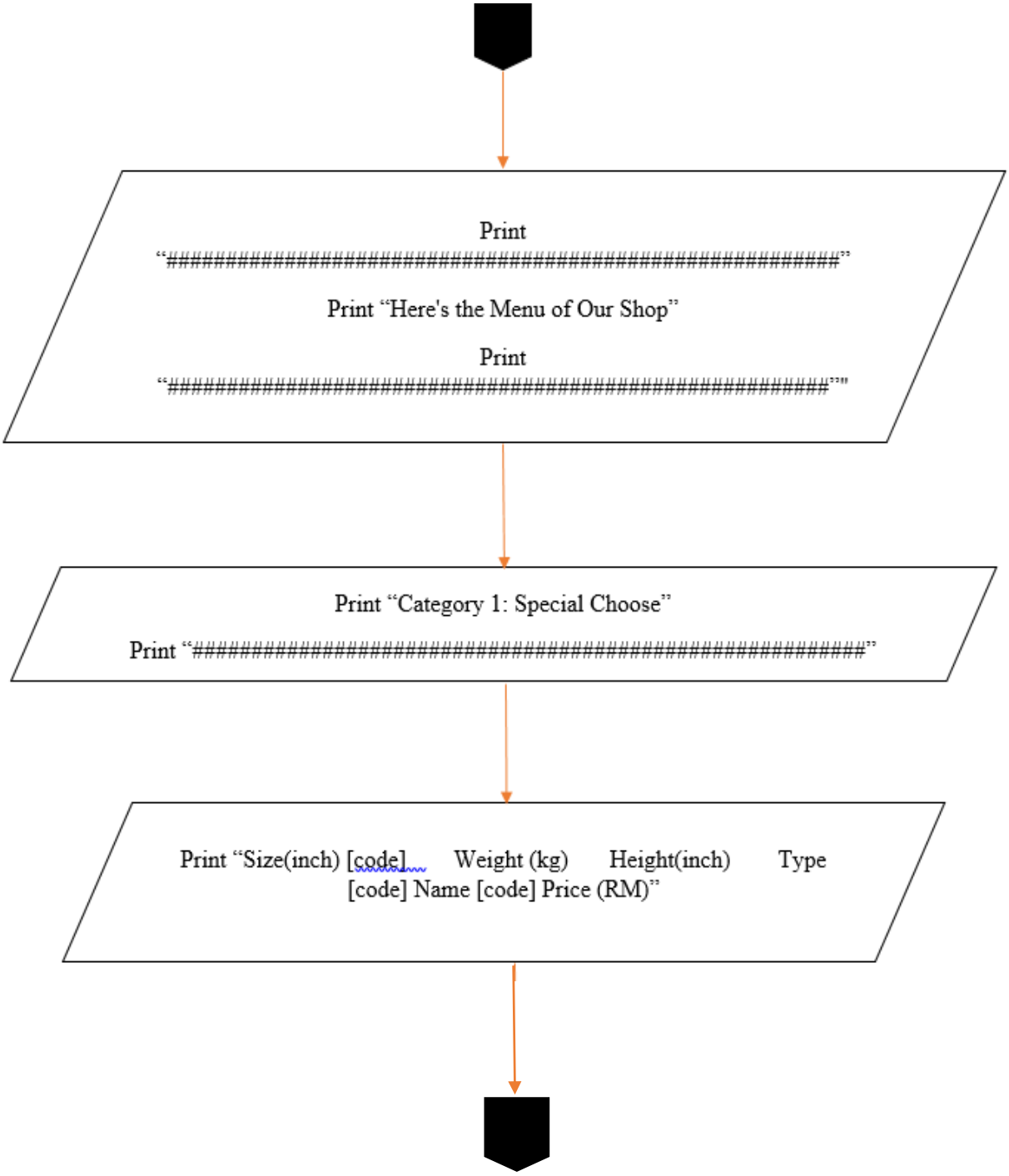
Input ans_size1
Print “What is the name of cake that you want to order? (Please state the code):”
Input ans_code1
Print “What type of cake do you prefer? (Please state the code):” Input ans_type1
Print “How many cakes do you want? :”
Input ans_no1
Print “##” Print “Here's the Packaging Menu of Our Shop”
Print “##” Print “Packaging for Category 1: Special Choose”
Print “##” Print “Type Height(inch)/Shape [code] Decoration colour/colour Material Used [code] Price (RM)”
Print “White Glass]46] 184”
Print “4[4] Silver Clay [35] 140”
Print “Gold Wood [35] 44”
Print “Cake_Stand Aluminium [11] 28”
Print “White Glass [46] 230”
Print “5 [5] Silver Clay [35] 175”
Print “Gold Wood [35] 55”
Print “Aluminium [11] 35”
Print “##” Print “Square [1] White Glass [46] 46”
Print “Cake_Board Rectangle [1] Silver Clay [35] 35” Print “Round [1] Gold Wood [7] 11”
Print “Aluminium [11] 7”
Print “##” Print “##”
Print “##” Print “Packaging for Category 2: Special Cupcake” Print “##” Print “Type Height [code] Material Used [code] Price (RM)” Print “Aluminium foil [2] 2”
Print “Box_of 3 [1] Bagasse Paper [3] 3”;

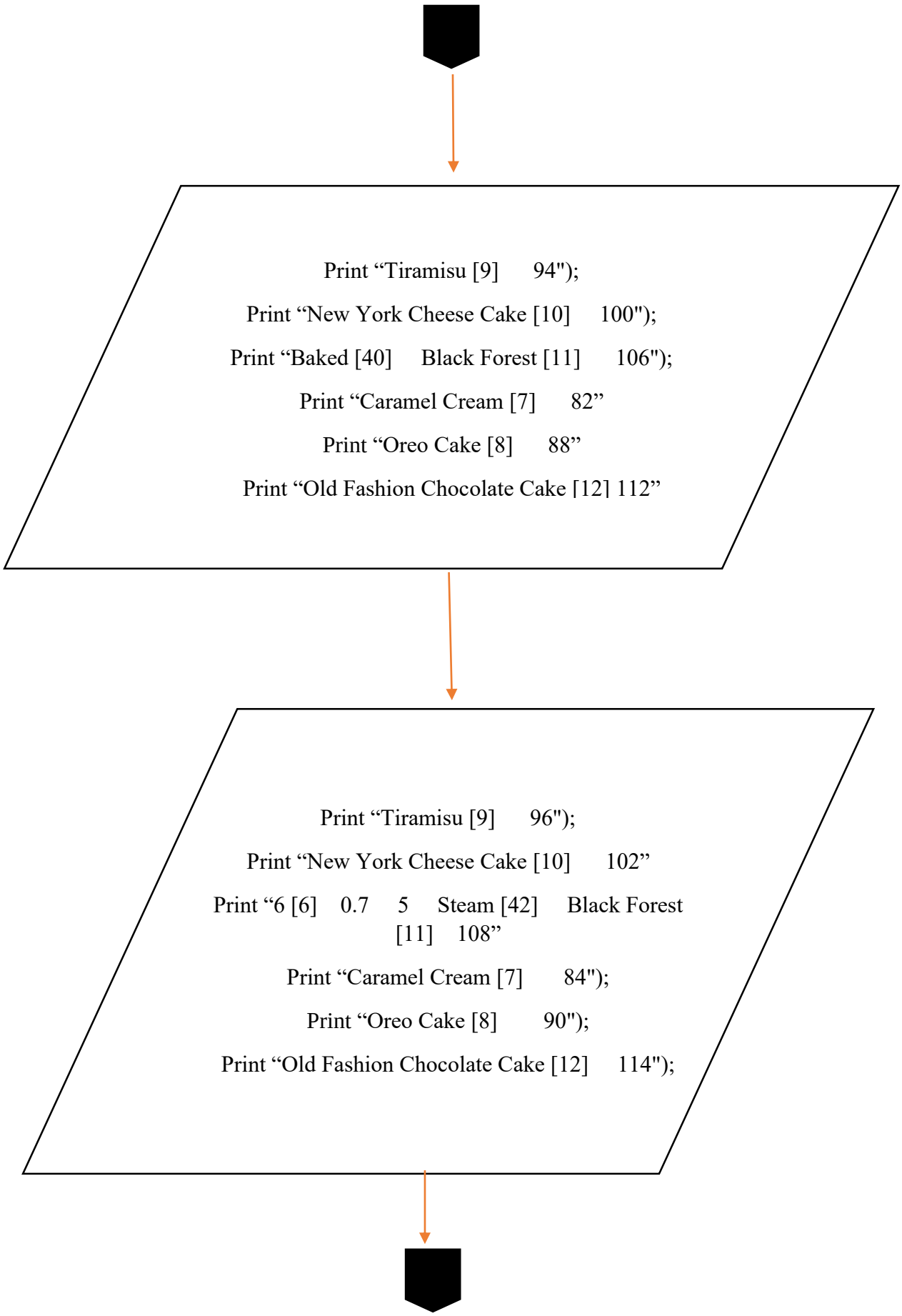
```
Print “6_cups Shop's container [8] 8”
Print “Container [0] 0”
Print “##############################################” Print “##############################################”
Print “##############################################” Print “Packaging for Category 3: Special Slice”
Print “##############################################” Print “Type Height [code] Material Used [code] Price (RM)” Print “Aluminium foil [0.7] 1.4”
Print “Box_of 6 [2] Bagasse Paper [0.5] 1” Print “2_slices Shop's container [2] 4”
Print “Container [0] 0”
Print “##############################################” Print “##############################################”
Print “Choose the type of packaging:”
Input type_pack
Print “What is the height/shape of packaging (Please state the code):” Input size_pack
Print “What is the material used to create the packaging? (Please state the code):”
Input mater_pack
price_one_cake = (ans_size1 * ans_code1)+ ans_type1
to_price = (ans_no1*price_one_cake)
price_pack = (size_pack*mater_pack)* ans_no1
sum_all = price_pack+ to_price
dis_rec = (0.05*sum_all)
pay = (sum_all - dis_rec)
Print “##############################################” Print “CUSTOMER'S RECEIPT”
Print “NAME: " + name)”
Print “DATE OF ORDER: " + order)”
Print “DATE TO PICK UP: " + take)”
Print “DETAILS”
Print “CODE FOR SIZE OF CAKE: " + ans_size1”
Print “CODE FOR CAKE: " + ans_code1”
```

Print “CODE FOR TYPE OF CAKE: " + ans_type1”
Print “QUANTITY OF CAKE: " + ans_no1”
Print “TYPE OF PACKAGING: " + type_pack”
Print “CODE FOR PACKAGING SIZE: "+ size_pack” Print “CODE FOR PACKAGING MATERIAL: " + mater_pack)” Print “SUBTOTAL: " +sum_all”
Print “DISCOUNT RECEIVE: %.1f" ,dis_rec”
Print “TOTAL PAYMENT: %.1f", pay”
Print “*Please bring your container”
Print “3 days before date of pick”
Print “Thank you for purchase from us*”
Print “##” End

9. FLOWCHART


Start
Print "Hi! Welcome to Special Cake"
Print "Please fill the information detail"
Print "Please state your name:"
Input name
Print "Please state your address location:"
Input address
Print "Please state your contact number:"
Input contact
Print "Please state the date of order:"
Input order
Print " Please state date to pick up (7 days after date of
Input take


Print
“##”
Print “Here's the Menu of Our Shop”
Print
“##””
Print “Category 1: Special Choose”
Print “##”
Print “Size(inch) [code] Weight (kg) Height(inch) Type
[code] Name [code] Price (RM)”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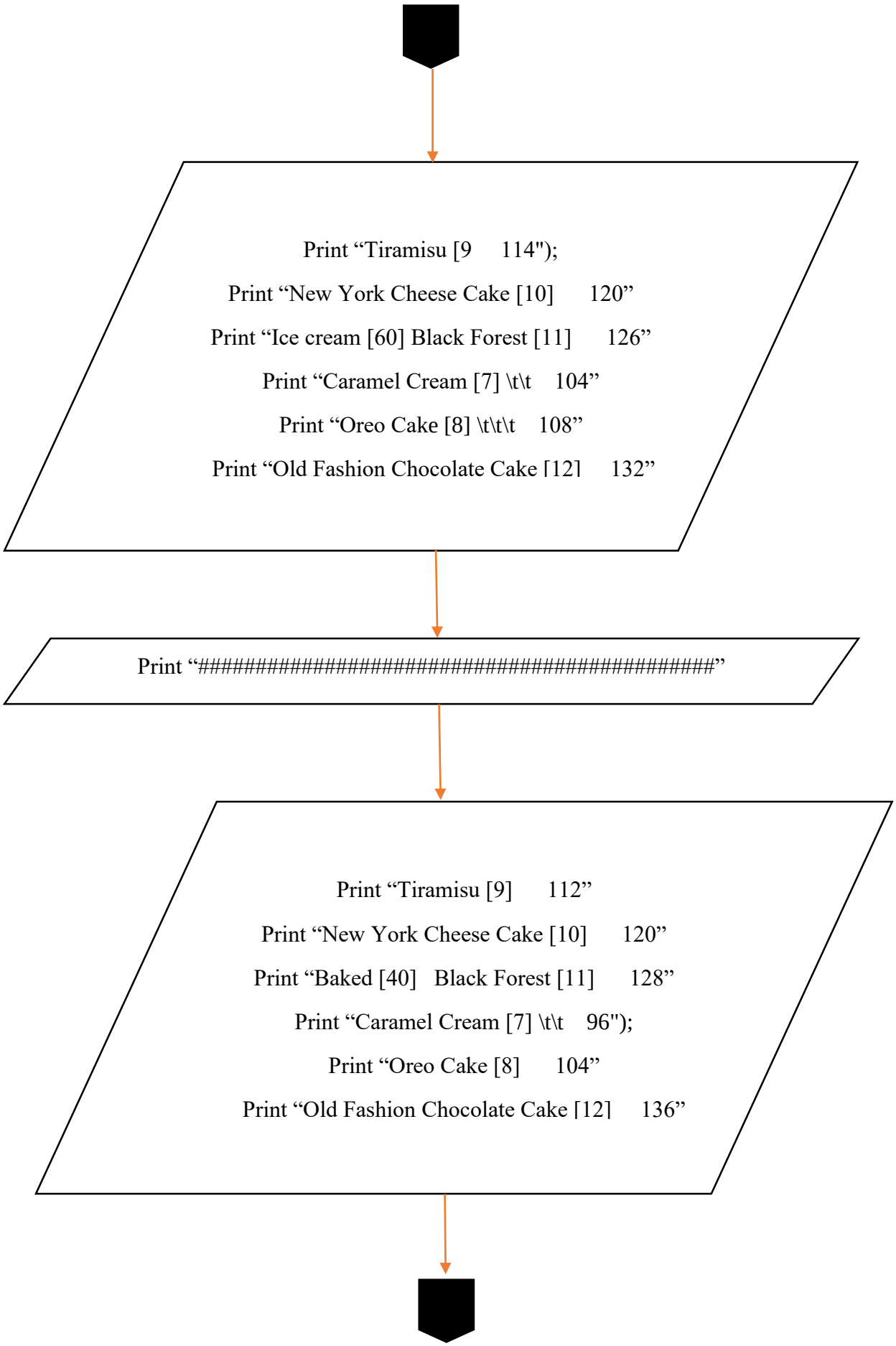
Print “Caramel Cream [7] 82”
Print “Oreo Cake [8] 88”
Print “Old Fashion Chocolate Cake [12] 112”
Print “Tiramisu [9] 96");
Print “New York Cheese Cake [10] 102”
Print “6 [6] 0.7 5 Steam [42] Black Forest [11] 108”
Print “Caramel Cream [7] 84");
Print “Oreo Cake [8] 90");
Print “Old Fashion Chocolate Cake [12] 114");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Print “Ice cream [60] Black Forest [11] 126”
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Print “Oreo Cake [8] \t\t\t 108”
Print “Old Fashion Chocolate Cake [12] 132”
Print “##”
Print “Tiramisu [9] 112”
Print “New York Cheese Cake [10] 120”
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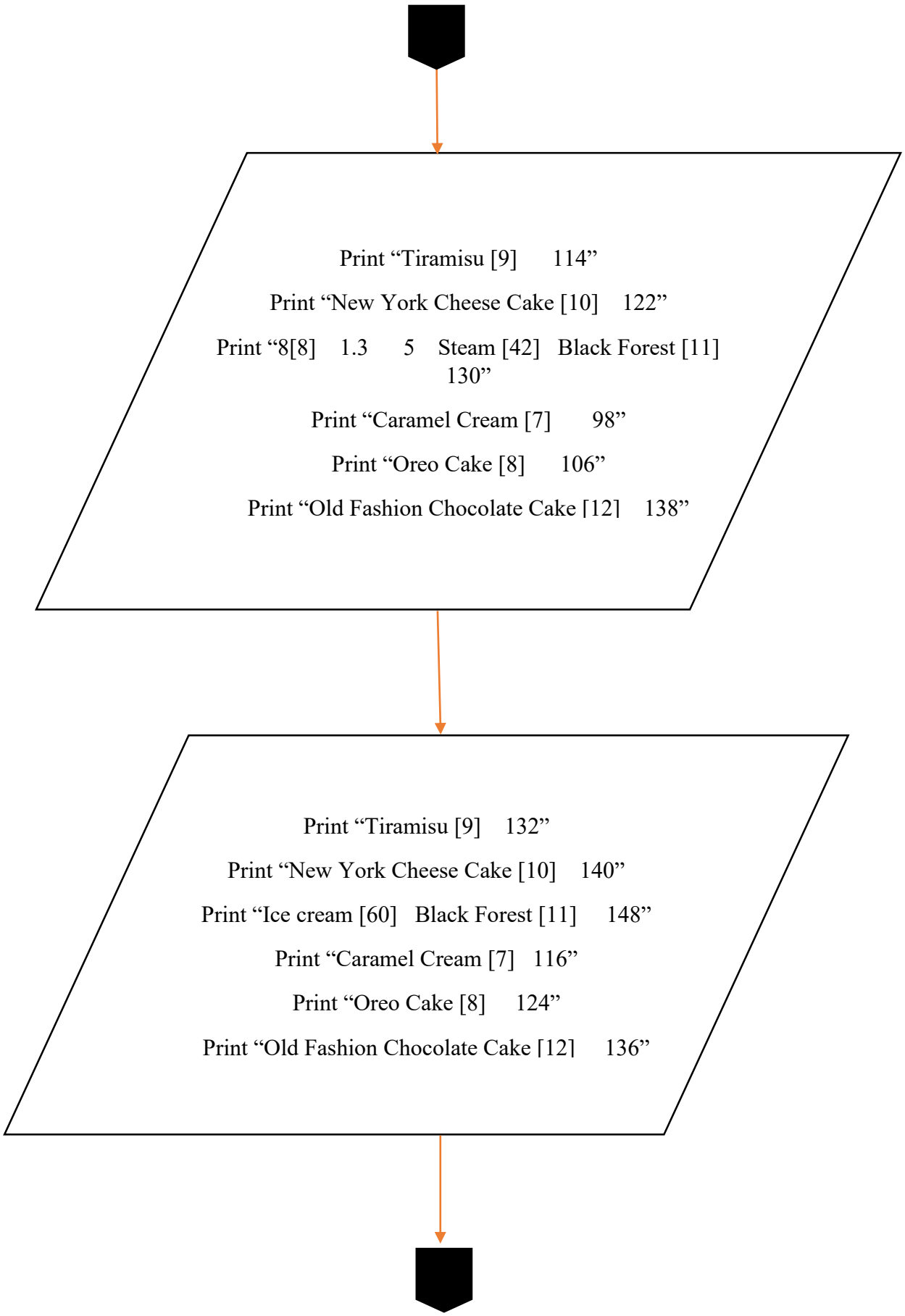
Print “Old Fashion Chocolate Cake [12] 136”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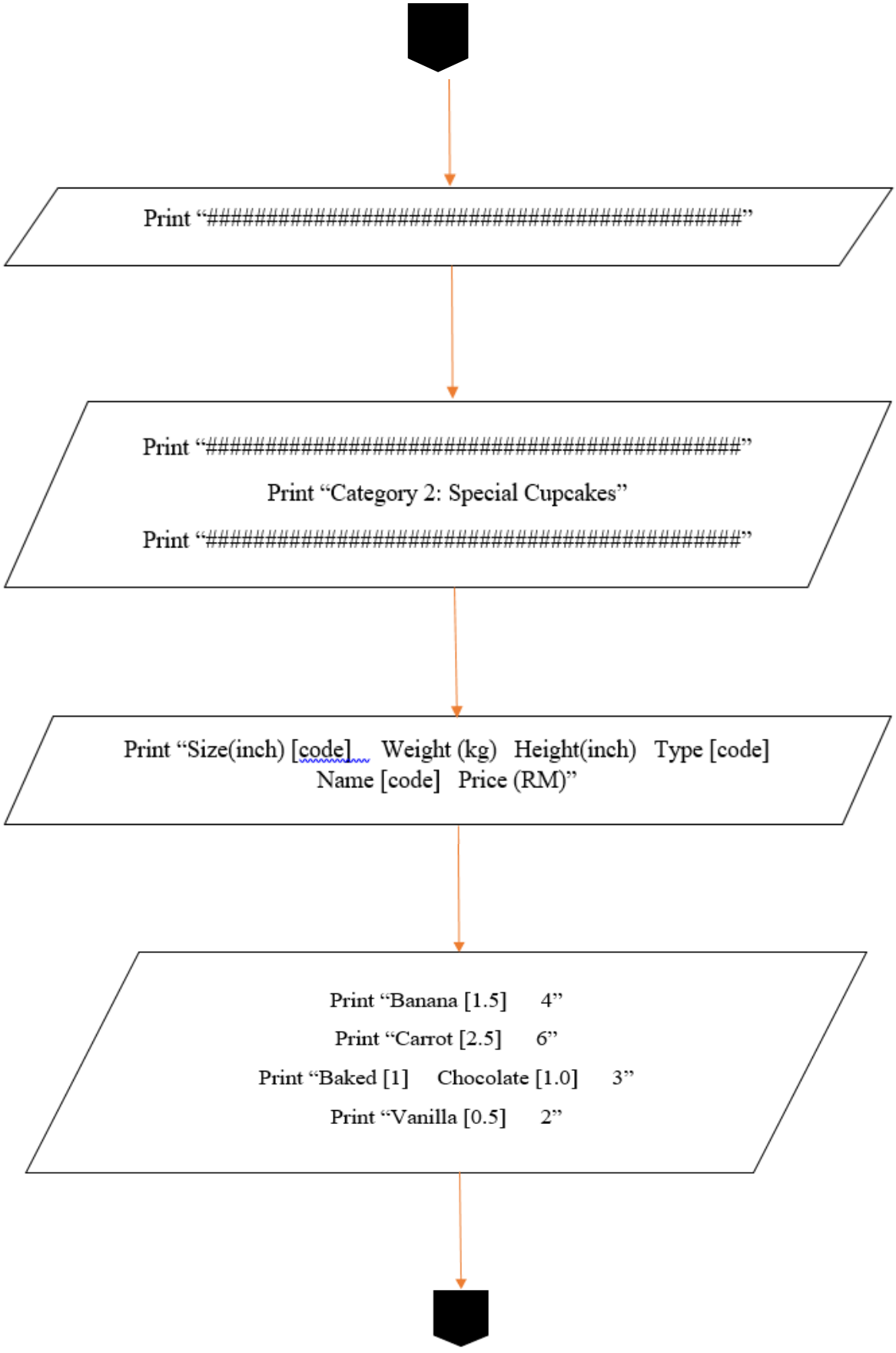
Print “New York Cheese Cake [10] 122”
Print “8[8] 1.3 5 Steam [42] Black Forest [11] 130”
Print “Caramel Cream [7] 98”
Print “Oreo Cake [8] 106”
Print “Old Fashion Chocolate Cake [12] 138”
Print “Tiramisu [9] 132”
Print “New York Cheese Cake [10] 140”
Print “Ice cream [60] Black Forest [11] 148”
Print “Caramel Cream [7] 116”
Print “Oreo Cake [8] 124”
Print “Old Fashion Chocolate Cake [12] 136”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Print "##"
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Print "##"
Print "Size(inch) [code] Weight (kg) Height(inch) Type [code] Name [code] Price (RM)"
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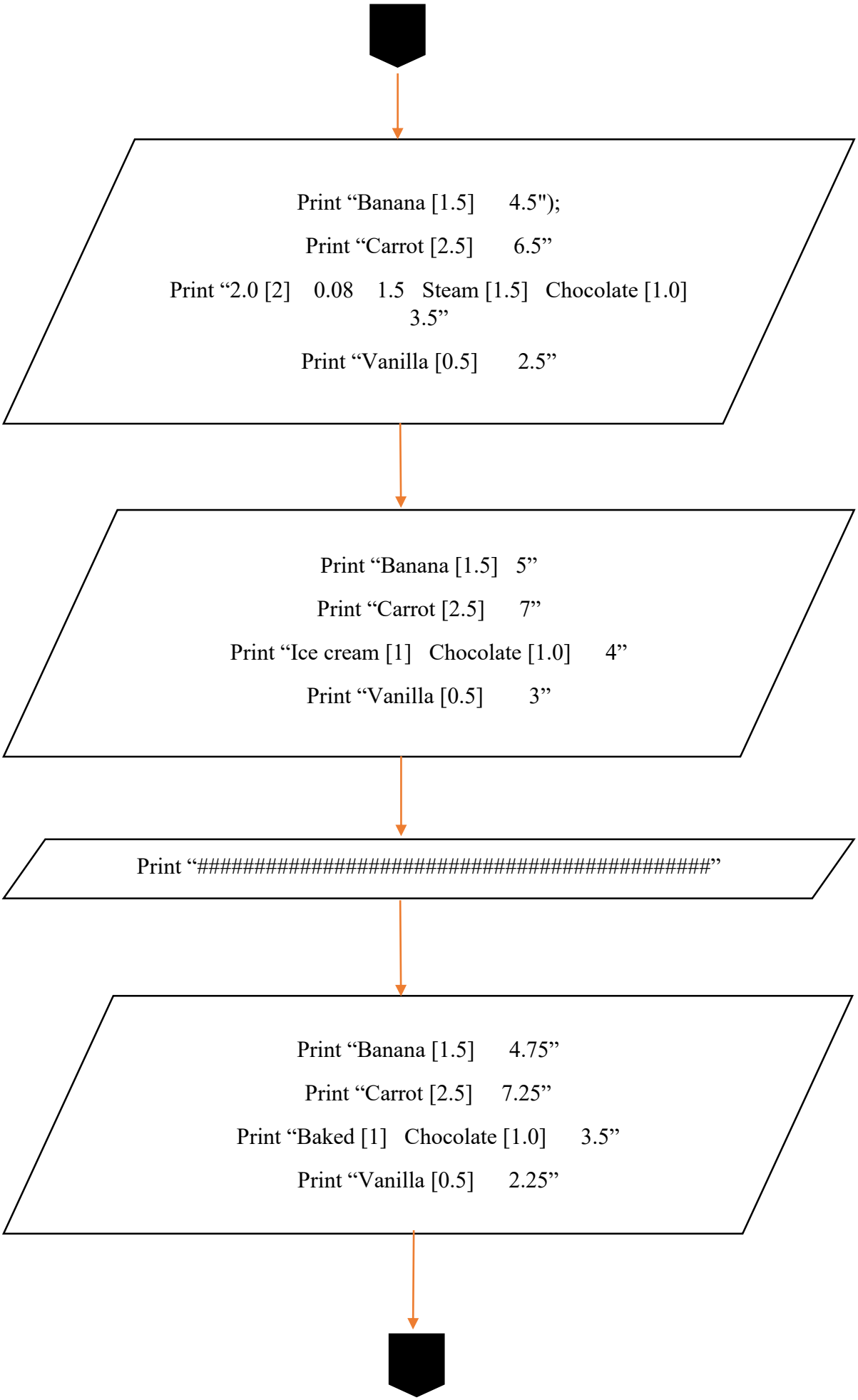
Print "Carrot [2.5] 6"
Print "Baked [1] Chocolate [1.0] 3"
Print "Vanilla [0.5] 2"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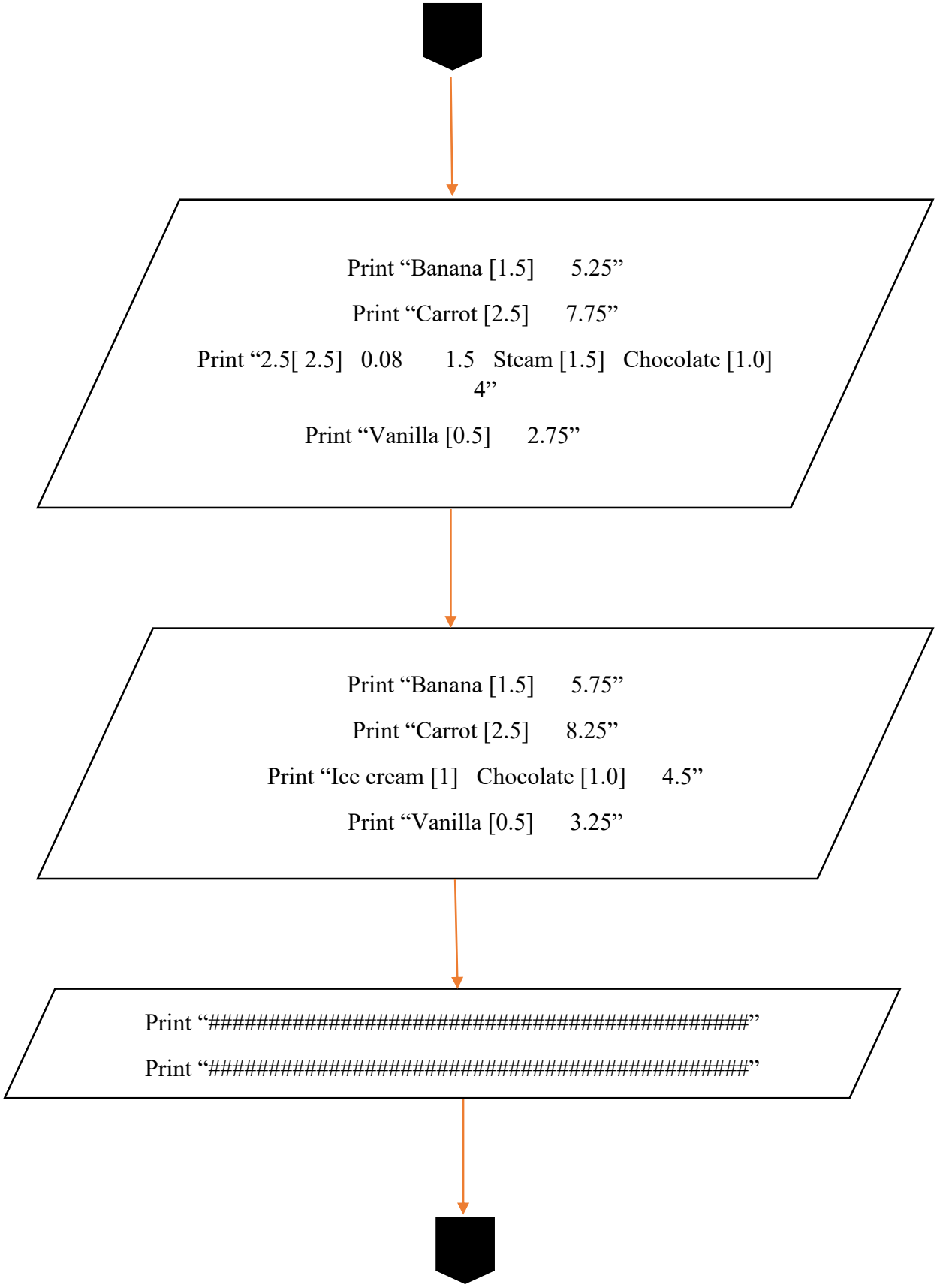
Print “Vanilla [0.5] 2.5”
Print “Banana [1.5] 5”
Print “Carrot [2.5] 7”
Print “Ice cream [1] Chocolate [1.0] 4”
Print “Vanilla [0.5] 3”
Print “##”
Print “Banana [1.5] 4.75”
Print “Carrot [2.5] 7.25”
Print “Baked [1] Chocolate [1.0] 3.5”
Print “Vanilla [0.5] 2.25”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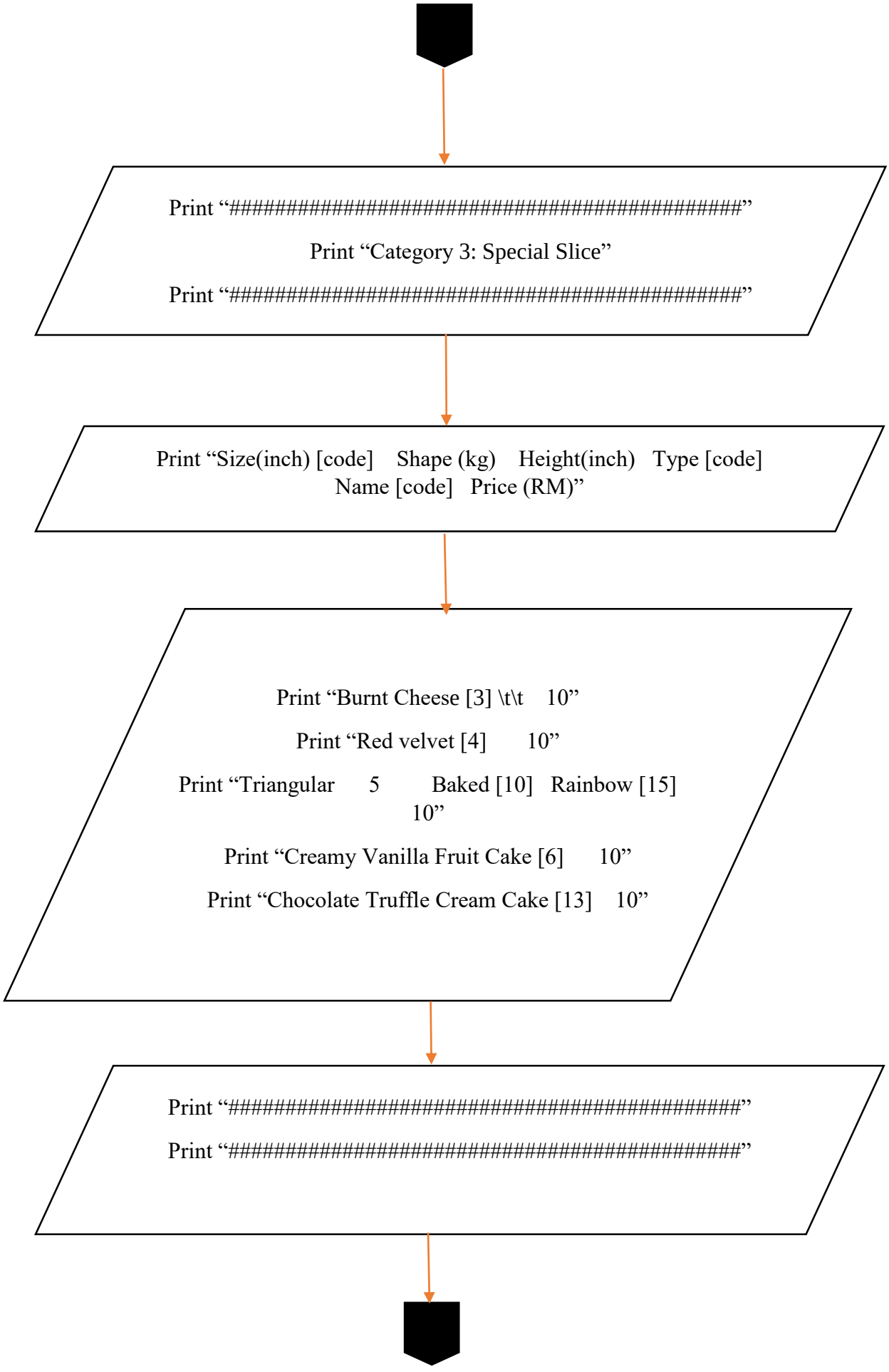
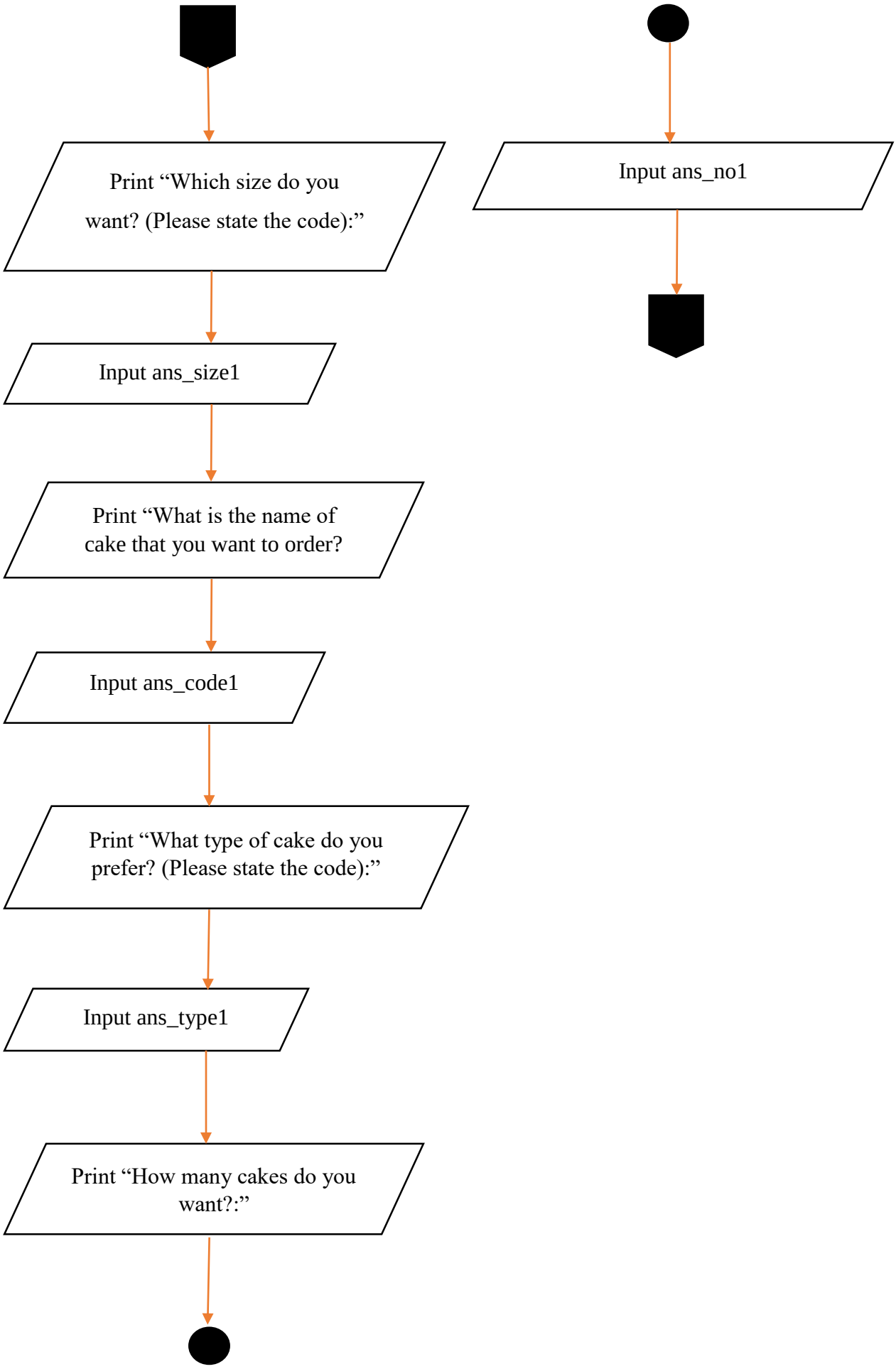
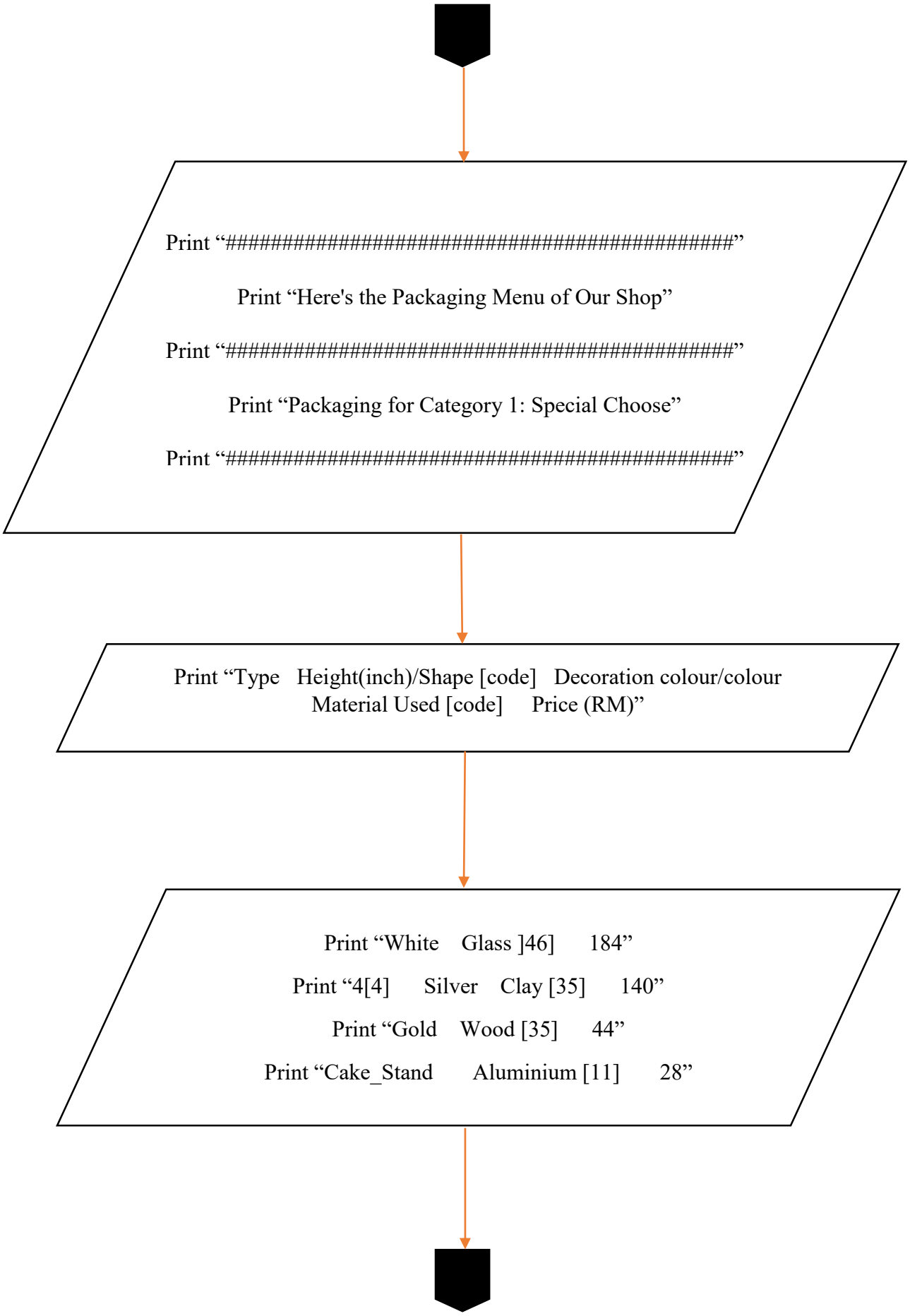
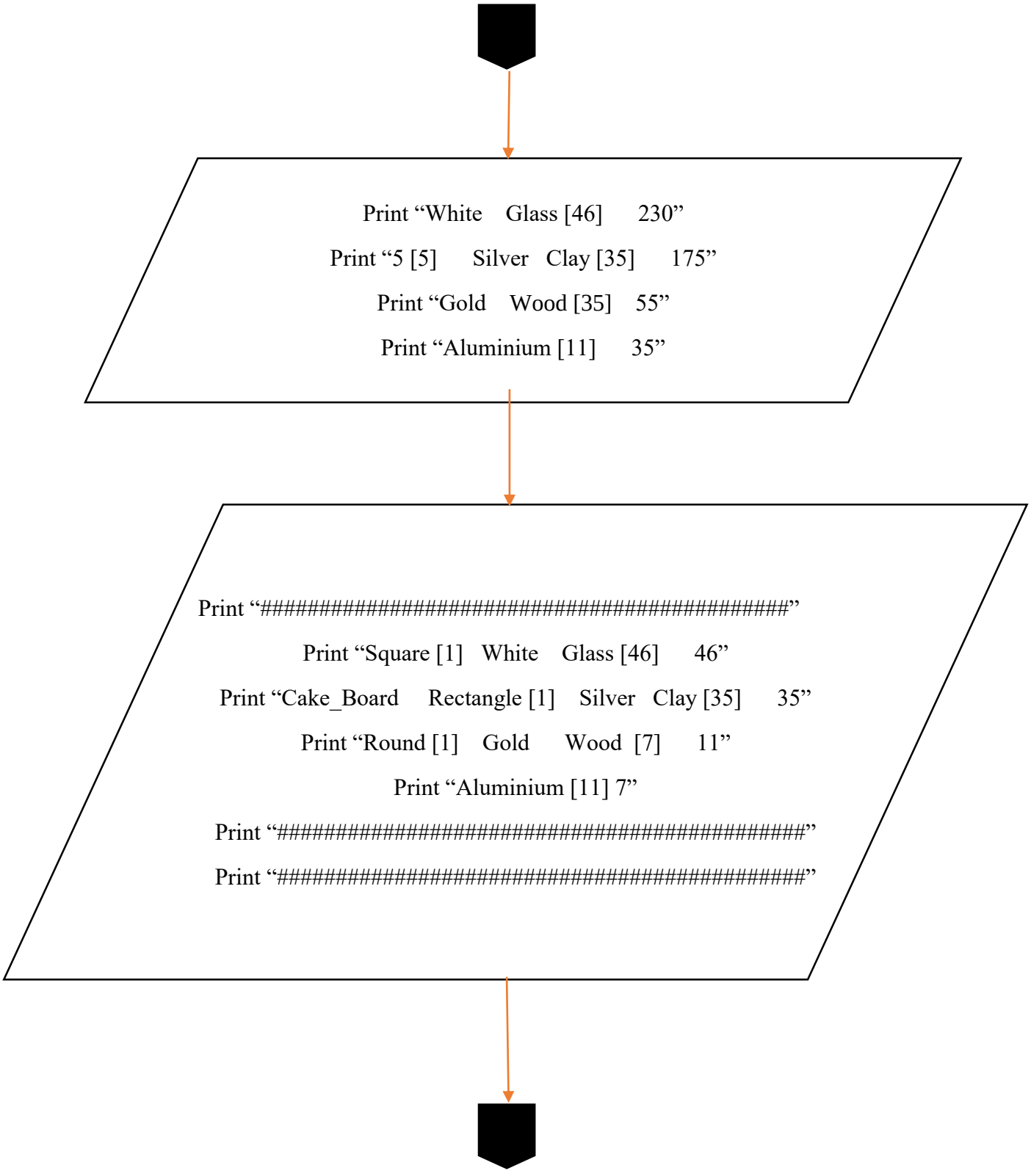
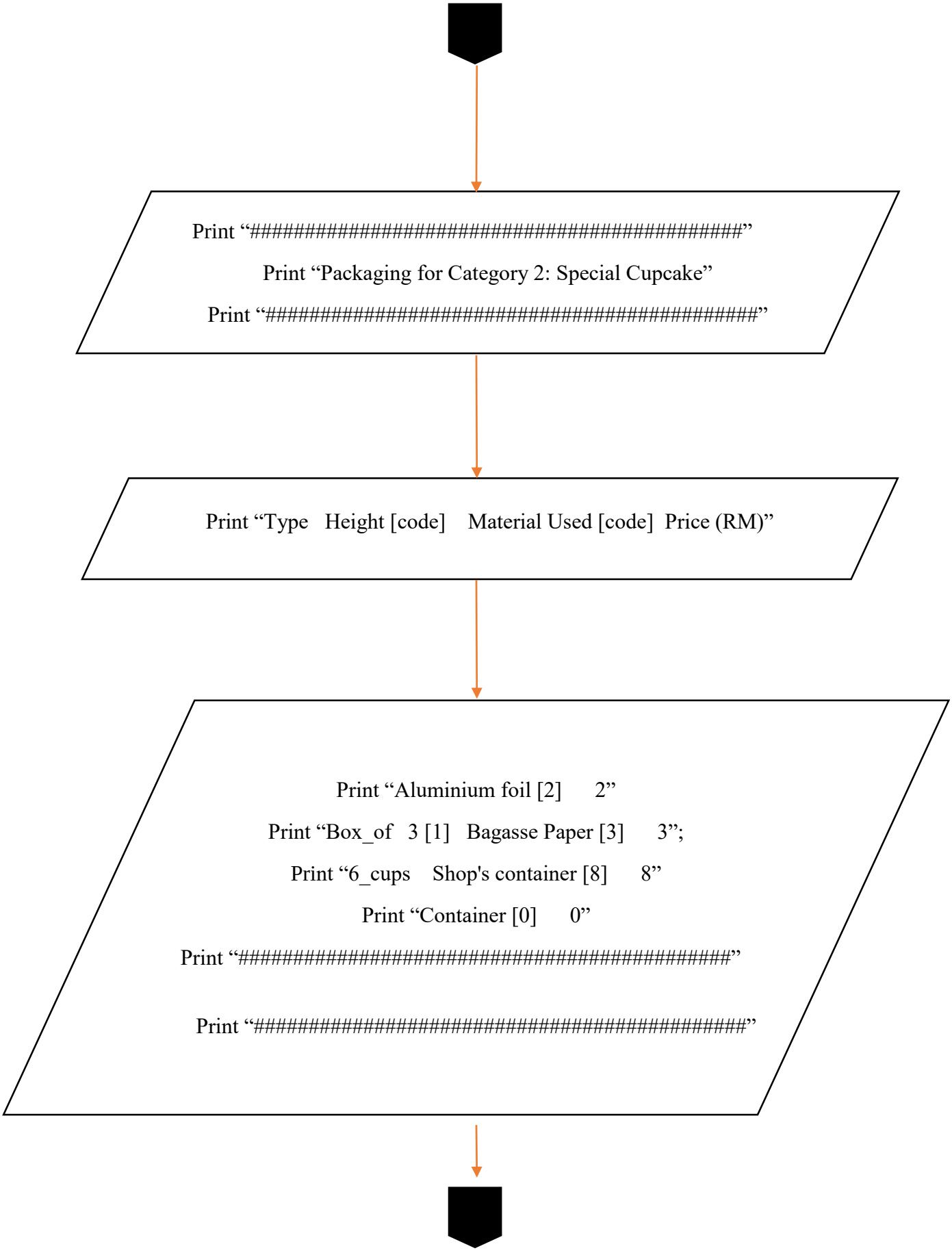
Print “Vanilla [0.5] 2.75”
Print “Banana [1.5] 5.75”
Print “Carrot [2.5] 8.25”
Print “Ice cream [1] Chocolate [1.0] 4.5”
Print “Vanilla [0.5] 3.25”
Print “##”
Print “##”

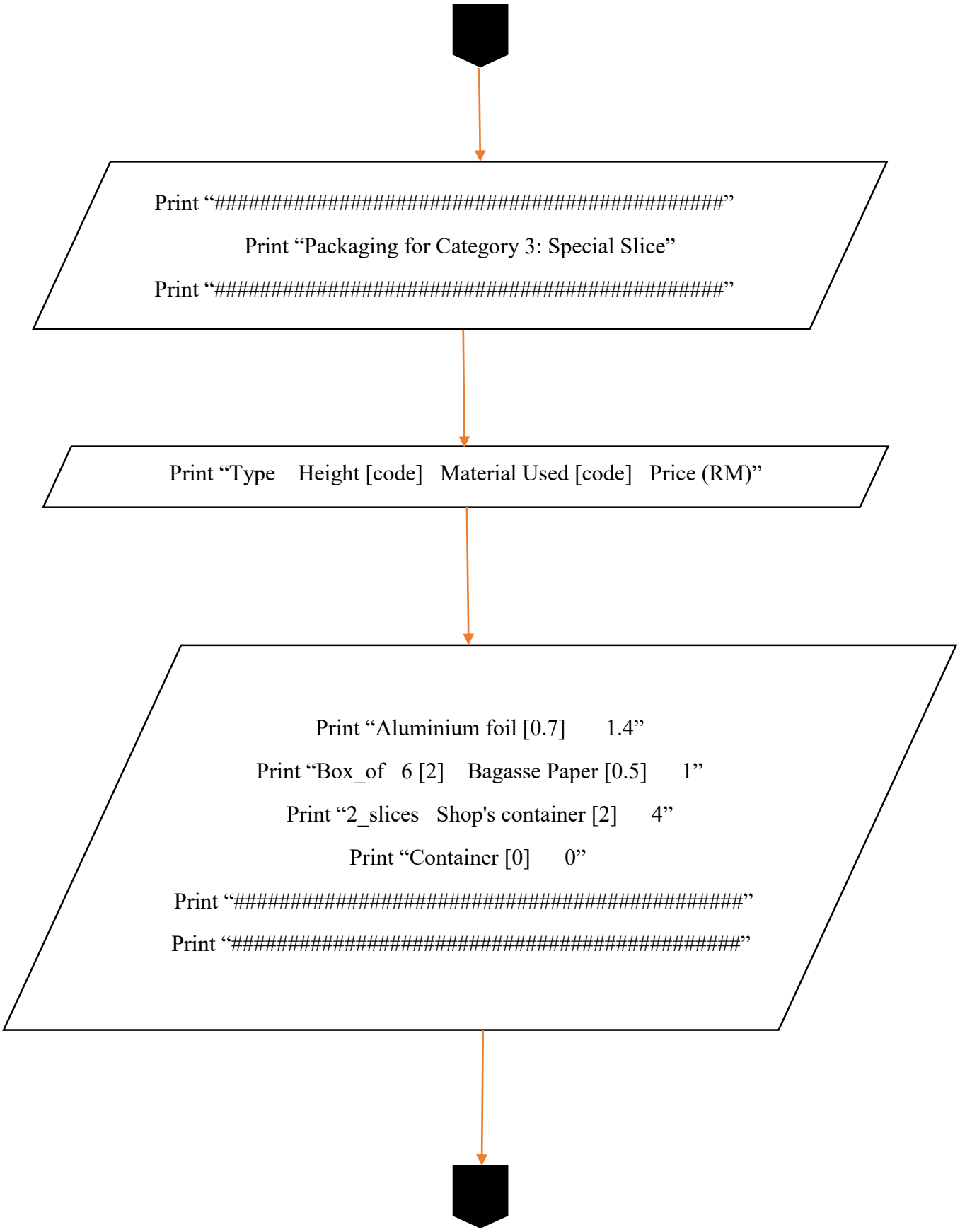

Print "##"
Print "Category 3: Special Slice"
Print "##"
Print "Size(inch) [code] Shape (kg) Height(inch) Type [code] Name [code] Price (RM)"
Print "Burnt Cheese [3] \t\t 10"
Print "Red velvet [4] 10"
Print "Triangular 5 Baked [10] Rainbow [15] 10"
Print "Creamy Vanilla Fruit Cake [6] 10"
Print "Chocolate Truffle Cream Cake [13] 10"
Print "##"
Print "##"


Print “Which size do you want? (Please state the code):”
Input ans_size1
Print “What is the name of cake that you want to order?
Input ans_code1
Print “What type of cake do you prefer? (Please state the code):”
Input ans_type1
Print “How many cakes do you want?:”
Input ans_no1


Print "##"
Print "Here's the Packaging Menu of Our Shop"
Print "##"
Print "Packaging for Category 1: Special Choose"
Print "##"
Print "Type Height(inch)/Shape [code] Decoration colour/colour Material Used [code] Price (RM)"
Print "White Glass]46] 184"
Print "4[4] Silver Clay [35] 140"
Print "Gold Wood [35] 44"
Print "Cake_Stand Aluminium [11] 28"


Print “White Glass [46] 230”
Print “5 [5] Silver Clay [35] 175”
Print “Gold Wood [35] 55”
Print “Aluminium [11] 35”
Print “##”
Print “Square [1] White Glass [46] 46”
Print “Cake_Board Rectangle [1] Silver Clay [35] 35”
Print “Round [1] Gold Wood [7] 11”
Print “Aluminium [11] 7”
Print “##”
Print “##”


Print "##"
Print "Packaging for Category 2: Special Cupcake"
Print "##"
Print "Type Height [code] Material Used [code] Price (RM)"
Print "Aluminium foil [2] 2"
Print "Box_of 3 [1] Bagasse Paper [3] 3";
Print "6_cups Shop's container [8] 8"
Print "Container [0] 0"
Print "##"
Print "##"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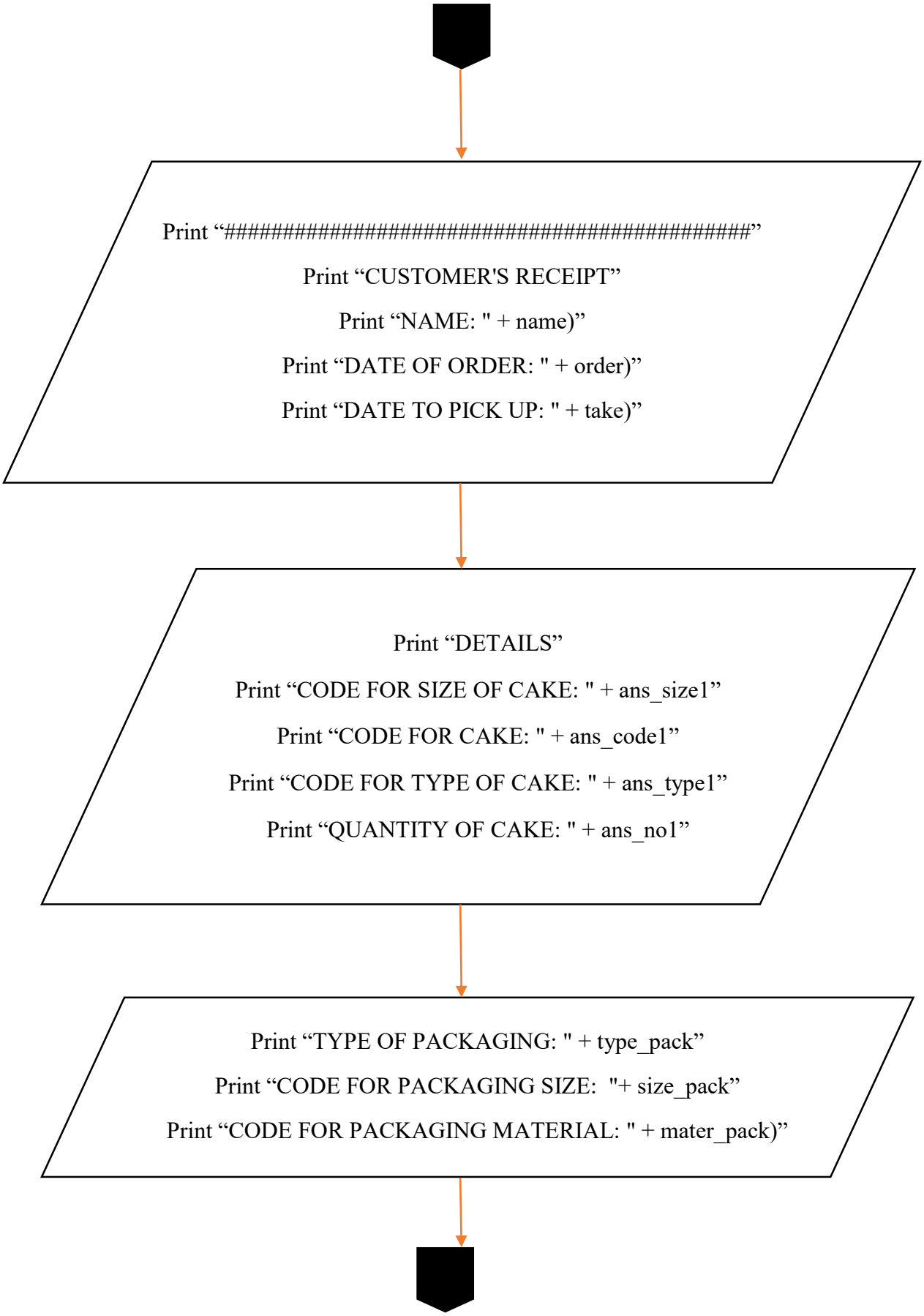
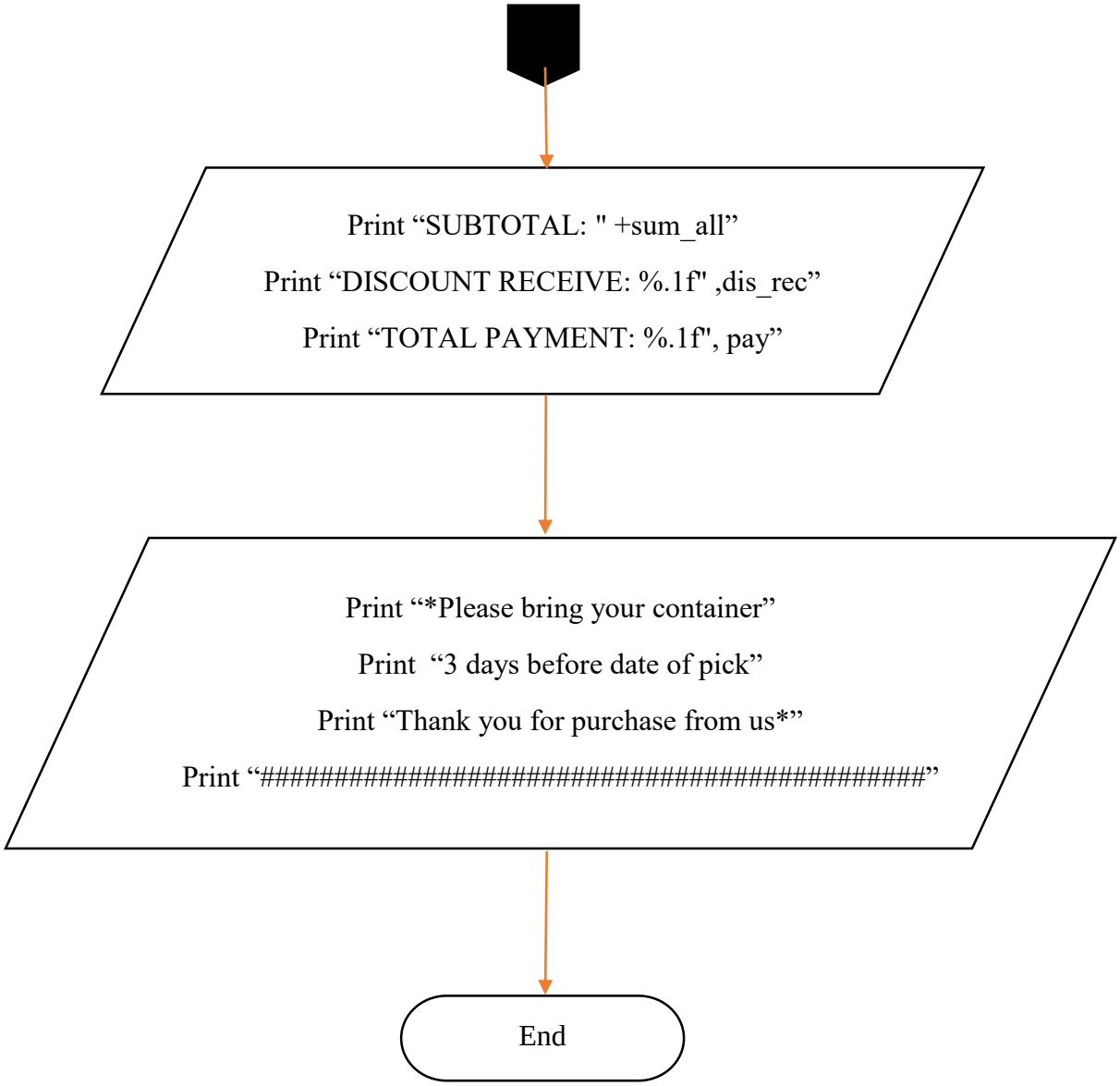
Print "Packaging for Category 3: Special Slice"
Print "##"
Print "Type Height [code] Material Used [code] Price (RM)"
Print "Aluminium foil [0.7] 1.4"
Print "Box_of 6 [2] Bagasse Paper [0.5] 1"
Print "2_slices Shop's container [2] 4"
Print "Container [0] 0"
Print "##"
Print "##"


Print “Choose the type of packaging:”
Input type_pack
Print “What is the height/shape of packaging
Input size_pack
Print “What is the material used to create the packaging?
Input mater_pack
price_one_cake = (ans_size1 * ans_code1)+ ans_type1
to_price = (ans_no1*price_one_cake)
price_pack = (size_pack*mater_pack)* ans_no1
sum_all = price_pack+ to_price
dis_rec = (0.05*sum_all)
pay = (sum_all - dis_rec)


Print “##”
Print “CUSTOMER'S RECEIPT”
Print “NAME: " + name)”
Print “DATE OF ORDER: " + order)”
Print “DATE TO PICK UP: " + take)”
Print “DETAILS”
Print “CODE FOR SIZE OF CAKE: " + ans_size1”
Print “CODE FOR CAKE: " + ans_code1”
Print “CODE FOR TYPE OF CAKE: " + ans_type1”
Print “QUANTITY OF CAKE: " + ans_no1”
Print “TYPE OF PACKAGING: " + type_pack”
Print “CODE FOR PACKAGING SIZE: "+ size_pack”
Print “CODE FOR PACKAGING MATERIAL: " + mater_pack)”


Print “SUBTOTAL: " +sum_all”
Print “DISCOUNT RECEIVE: %.1f" ,dis_rec”
Print “TOTAL PAYMENT: %.1f", pay”
Print “*Please bring your container”
Print “3 days before date of pick”
Print “Thank you for purchase from us*”
Print “##”
End

10.CODING

cake.java | Copy.java | Scanner.class | Exercise1.java

```
1
2
3  package assignment1;
4
5  class cake {
6
7      public static void main(String[] args) {
8          /* this program will calculate the total price customer need to pay
9           * after choosing their cake and packaging material that they want*/
10
11         java.util.Scanner sc = new java.util.Scanner(System.in);
12
13         String address, order, take, name, colour_pack, type_pack;
14         int    ans_no1, ans_type1, ans_size1, ans_code1;
15         double  contact,price_one_cake, to_price, price_pack, sum_all, dis_rec, pay, size_pack, mater_pack;
16
17
18          // part 1
19         System.out.print("\t    Hi! Welcome to Special Cake \n\t     Please fill the information detail \n\n\tPlease state your name: ");
20         name=sc.nextLine();
21         System.out.print(" \tPlease state your address location: ");
22          address=sc.nextLine();
23         System.out.print(" \tPlease state your contact number: ");
24         contact=sc.nextDouble();
25         System.out.print("\tPlease state the date of order: ");
26         order=sc.next(); //put line, terus dia short cut next line
27         System.out.print(" \tPlease state date to pick up (7 days after date of order): ");
28         take=sc.next(); // ada or not x jejaskan coding
29
30
31
32          //part 2 : menu of cake
33         System.out.print("\n\n#########################################################################################################################");
34         System.out.println("\n \t\t\t\t\t Here's the Menu of Our Shop"); //2.2.2.4.4tab //
35         System.out.println("#########################################################################################################################");
36         System.out.println("\t\t\t\t\t Category 1: Special Choose");
37         System.out.println("#########################################################################################################################");
38         System.out.println("\n Size(inch) [code] \tWeight (kg) \tHeight(inch) \tType [code] \tName [code] \t\t\tPrice (RM)"); //2.2.2.4.4tab //
39         System.out.println("\n\t\t\t\t\t\t\t\t\t\tTiramisu[9] \t\t\t    94");
40         System.out.println("\t\t\t\t\t\t\t\t\t\tNew York Cheese Cake[10] \t    100");
41         System.out.println("       \t\t      \t\t       \t\t\t Baked[40]\tBlack Forest[11] \t\t    106");
42         System.out.println("\t\t\t\t\t\t\t\t\t\tCaramel Cream[7] \t\t    82");
43         System.out.println("\t\t\t\t\t\t\t\t\t\tOreo Cake[8] \t\t\t    88");
```

cake.java × Copy.java Scanner.class Exercise1.java

```
43        System.out.println("\t\t\t\t\t\t\t\t\t\tOreo Cake[8] \t\t\t    88");
44        System.out.println("\t\t\t\t\t\t\t\t\t\tOld Fashion Chocolate Cake[12]\t    112");
45
46        System.out.println("\n\t\t\t\t\t\t\t\t\t\tTiramisu[9] \t\t\t    96");
47        System.out.println("\t\t\t\t\t\t\t\t\t\tNew York Cheese Cake[10] \t    102");
48        System.out.println("     6[6]\t\t   0.7 \t\t     5 \t\t Steam[42]\tBlack Forest[11] \t\t    108");
49        System.out.println("\t\t\t\t\t\t\t\t\t\tCaramel Cream[7] \t\t    84");
50        System.out.println("\t\t\t\t\t\t\t\t\t\tOreo Cake[8] \t\t\t    90");
51        System.out.println("\t\t\t\t\t\t\t\t\t\tOld Fashion Chocolate Cake[12]\t    114");
52
53        System.out.println("\n\t\t\t\t\t\t\t\t\t\tTiramisu[9] \t\t\t    114");
54        System.out.println("\t\t\t\t\t\t\t\t\t\tNew York Cheese Cake[10] \t    120");
55        System.out.println("       \t\t       \t\t      \t\t\tIce cream[60]\tBlack Forest[11] \t\t    126");
56        System.out.println("\t\t\t\t\t\t\t\t\t\tCaramel Cream[7] \t\t    104");
57        System.out.println("\t\t\t\t\t\t\t\t\t\tOreo Cake[8] \t\t\t    108");
58        System.out.println("\t\t\t\t\t\t\t\t\t\tOld Fashion Chocolate Cake[12]\t    132");
59        System.out.println("#########################################################################################################");
60        System.out.println("\n\t\t\t\t\t\t\t\t\t\tTiramisu[9] \t\t\t    112");
61        System.out.println("\t\t\t\t\t\t\t\t\t\tNew York Cheese Cake[10] \t    120");
62        System.out.println("       \t\t      \t\t       \t\t\t Baked[40]\tBlack Forest[11] \t\t    128");
63        System.out.println("\t\t\t\t\t\t\t\t\t\tCaramel Cream[7] \t\t    96");
64        System.out.println("\t\t\t\t\t\t\t\t\t\tOreo Cake[8] \t\t\t    104");
65        System.out.println("\t\t\t\t\t\t\t\t\t\tOld Fashion Chocolate Cake[12]\t    136");
66
67        System.out.println("\n\t\t\t\t\t\t\t\t\t\tTiramisu[9] \t\t\t    114");
68        System.out.println("\t\t\t\t\t\t\t\t\t\tNew York Cheese Cake[10] \t    122");
69        System.out.println("     8[8]\t\t   1.3 \t\t     5 \t\t Steam[42]\tBlack Forest[11] \t\t    130");
70        System.out.println("\t\t\t\t\t\t\t\t\t\tCaramel Cream[7] \t\t    98");
71        System.out.println("\t\t\t\t\t\t\t\t\t\tOreo Cake[8] \t\t\t    106");
72        System.out.println("\t\t\t\t\t\t\t\t\t\tOld Fashion Chocolate Cake[12]\t    138");
73
74        System.out.println("\n\t\t\t\t\t\t\t\t\t\tTiramisu[9] \t\t\t    132");
75        System.out.println("\t\t\t\t\t\t\t\t\t\tNew York Cheese Cake[10] \t    140");
76        System.out.println("       \t\t       \t\t      \t\t\tIce cream[60]\tBlack Forest[11] \t\t    148");
77        System.out.println("\t\t\t\t\t\t\t\t\t\tCaramel Cream[7] \t\t    116");
78        System.out.println("\t\t\t\t\t\t\t\t\t\tOreo Cake[8] \t\t\t    124");
79        System.out.println("\t\t\t\t\t\t\t\t\t\tOld Fashion Chocolate Cake[12]\t    136");
80        System.out.println("\n#########################################################################################################");
81        System.out.println("#########################################################################################################");
82
83        //category 2 cupcake
84        System.out.print("\n\n#########################################################################################################");
85        System.out.println("\n\t\t\t\t\tCategory 2: Special Cupcakes");
```

```
        //category 2 cupcake
        System.out.print("\n\n#########################################################################################################################");
        System.out.println("\n\t\t\t\t\tCategory 2: Special Cupcakes");
        System.out.println("#########################################################################################################################");
        System.out.println("\n Size(inch) [code] \tWeight (kg) \tHeight(inch) \tType [code] \tName [code] \t\t\tPrice (RM)"); //2.2.2.4.4tab //

        System.out.println("\n\t\t\t\t\t\t\t\t\tBanana[1.5] \t\t\t    4");
        System.out.println("\t\t\t\t\t\t\t\t\tCarrot[2.5] \t\t\t    6");
        System.out.println("       \t\t      \t\t       \t\t\t Baked[1]\tChocolate[1.0] \t\t\t    3");
        System.out.println("\t\t\t\t\t\t\t\t\tVanila[0.5] \t\t\t    2");


        System.out.println("\n\t\t\t\t\t\t\t\t\tBanana[1.5] \t\t\t    4.5");
        System.out.println("\t\t\t\t\t\t\t\t\tCarrot[2.5] \t\t\t    6.5");
        System.out.println("     2.0[2]\t\t   0.08 \t     1.5 \t Steam[1.5]\tChocolate[1.0] \t\t\t    3.5");
        System.out.println("\t\t\t\t\t\t\t\t\tVanila[0.5] \t\t\t    2.5");


        System.out.println("\n\t\t\t\t\t\t\t\t\tBanana[1.5] \t\t\t    5");
        System.out.println("\t\t\t\t\t\t\t\t\tCarrot[2.5] \t\t\t    7");
        System.out.println("       \t\t      \t\t       \t\t\t Ice cream[1]\tChocolate[1.0] \t\t\t    4");
        System.out.println("\t\t\t\t\t\t\t\t\tVanila[0.5] \t\t\t    3");

        System.out.println("#########################################################################################################################");
        System.out.println("\n\t\t\t\t\t\t\t\t\tBanana[1.5] \t\t\t    4.75");
        System.out.println("\t\t\t\t\t\t\t\t\tCarrot[2.5] \t\t\t    7.25");
        System.out.println("       \t\t      \t\t       \t\t\t Baked[1]\tChocolate[1.0] \t\t\t    3.5");
        System.out.println("\t\t\t\t\t\t\t\t\tVanila[0.5] \t\t\t    2.25");

        System.out.println("\n\t\t\t\t\t\t\t\t\tBanana[1.5] \t\t\t    5.25");
        System.out.println("\t\t\t\t\t\t\t\t\tCarrot[2.5] \t\t\t    7.75");
        System.out.println("     2.5[2.5]\t\t   0.08 \t     1.5 \t Steam[1.5]\tChocolate[1.0] \t\t\t    4");
        System.out.println("\t\t\t\t\t\t\t\t\tVanila[0.5] \t\t\t    2.75");

        System.out.println("\n\t\t\t\t\t\t\t\t\tBanana[1.5] \t\t\t    5.75");
        System.out.println("\t\t\t\t\t\t\t\t\tCarrot[2.5] \t\t\t    8.25");
        System.out.println("       \t\t      \t\t       \t\t\t Ice cream[1]\tChocolate[1.0] \t\t\t    4.5");
        System.out.println("\t\t\t\t\t\t\t\t\tVanila[0.5] \t\t\t    3.25");
        System.out.println("\n#########################################################################################################################");
        System.out.println("#########################################################################################################################");

        // category 3 slice of cake
        System.out.print("\n\n#########################################################################################################################");
```

```
124         // category 3 slice of cake
125         System.out.print("\n\n#########################################################################################################################");
126         System.out.println("\n\t\t\t\t\t\tCategory 3: Special Slice");
127         System.out.println("#########################################################################################################################");
128         System.out.println("\n Size(inch) [code] \tShape (kg) \tHeight(inch) \tType [code] \tName [code] \t\t\tPrice (RM)"); //2.2.2.4.4tab //
129 
130         System.out.println("\n\t\t\t\t\t\t\t\t\t\tBurnt Cheese[3] \t\t    10");
131         System.out.println("\t\t\t\t\t\t\t\t\tRed velvet[4] \t\t\t    10");
132         System.out.println("       2[0]\t\tTriangular\t     5       \t Baked[10]\tRainbow[15] \t\t\t    10");
133         System.out.println("\t\t\t\t\t\t\t\t\tCreamy Vanila Fruit Cake[6] \t    10");
134         System.out.println("\t\t\t\t\t\t\t\t\tChocolate Truffle Cream Cake[13]    10");
135         System.out.println("\t\t\t\t\t\t\t\t\tClassic Almond Cake[14] \t    10");
136 
137         System.out.println("\n#########################################################################################################################");
138         System.out.println("#########################################################################################################################");
139 
140     //part3: instruction that ask customer to choose their cake
141         System.out.print("\n\tWhich size do you want? (Please state the code): ");
142         ans_size1=sc.nextInt();
143         System.out.print("\tWhat is the name of cake that you want to order? (Please state the code): ");
144         ans_code1=sc.nextInt();
145         System.out.print("\tWhat type of cake do you prefer? (Please state the code): ");
146         ans_type1=sc.nextInt();
147         System.out.print("\tHow many cakes do you want?: ");
148         ans_no1=sc.nextInt();
149 
150 
151 
152         //part 4: menu of packaging material
153         System.out.print("\n\n#########################################################################################################################");
154         System.out.println("\n \t\t\t\t\t Here's the Packaging Menu of Our Shop"); //2.2.2.4.4tab //
155         System.out.println("#########################################################################################################################");
156         System.out.println("\t\t\t\tPackaging for Category 1: Special Choose");
157         System.out.println("#########################################################################################################################");
158         System.out.println(" Type \t\tHeight(inch)/Shape [code] \tDecoration colour/colour \tMaterial Used [code] \tPrice (RM)"); //2.2.2.4.4tab //
159         System.out.println("\n\t \t\t      \t\t\t\tWhite \t\t\t  Glass]46] \t\t    184");
160         System.out.println("\t\t\t4[4]    \t\t\tSilver\t\t\t  Clay[35] \t\t    140");
161         System.out.println("\t\t\t\t\t\t\tGold \t\t\t  Wood[35] \t\t    44");
162         System.out.println("Cake_Stand\t\t\t\t\t\t\t\t\t  Aluminium[11] \t    28");
163         System.out.println("\n\t \t\t      \t\t\t\tWhite \t\t\t  Glass]46] \t\t    230");
164         System.out.println("\t\t\t5[5]    \t\t\tSilver\t\t\t  Clay[35] \t\t    175");
165         System.out.println("\t\t\t\t\t\t\tGold \t\t\t  Wood[35] \t\t    55");
166         System.out.println("\t\t\t\t\t\t\t\t\t\t  Aluminium[11] \t    35");
```

cake.java X | Copy.java | Scanner.class | Exercise1.java

```
165         System.out.println("\t\t\t\t\t\t\tGold \t\t\t  Wood[35] \t\t    55");
166         System.out.println("\t\t\t\t\t\t\t\t\t\t  Aluminium[11] \t    35");
167         System.out.println("#########################################################################################################################");
168         System.out.println("\t\t    Square[1] \t\t\t\tWhite \t\t\t  Glass[46] \t\t    46");
169         System.out.println("Cake_Board\t    Rectangle[1]  \t\t\tSilver\t\t\t  Clay[35] \t\t\t    35");
170         System.out.println("\t\t    Round[1]\t\t\t\tGold \t\t\t  Wood[7] \t\t\t    11");
171         System.out.println("\t\t\t\t\t\t\t\t\t\t  Aluminium[11]\t\t    7");
172         System.out.println("\n#########################################################################################################################");
173         System.out.println("#########################################################################################################################");
174
175         //packaging for category 2
176         System.out.println("\n\n#################################################################");
177         System.out.println("\t\t Packaging for Category 2: Special Cupcake");
178         System.out.println("#################################################################");
179         System.out.println(" Type  \t\tHeight/code \tMaterial Used [code] \tPrice (RM)"); //2.2.2.4.4tab //
180         System.out.println("\n\t \t\t      \tAluminium foil[2]  \t    2");
181         System.out.println("Box_of_\t\t  3[1]\t\tBagasse Paper[3] \t    3");
182         System.out.println("6_cups\t\t\t\tShop's container[8] \t    8");
183         System.out.println("\t\t\t\tContainer[0] \t\t    0");
184
185         System.out.println("\n#################################################################");
186         System.out.println("#################################################################");
187
188         //packaging for category 3
189         System.out.println("\n\n#################################################################");
190         System.out.println("\t\t Packaging for Category 3: Special Slice");
191         System.out.println("#################################################################");
192         System.out.println(" Type  \t\tHeight/code \tMaterial Used [code] \tPrice (RM)"); //2.2.2.4.4tab //
193         System.out.println("\n\t \t\t      \tAluminium foil[0.7]  \t    1.4");
194         System.out.println("Box_of_\t\t  6[2]\t\tBagasse Paper[0.5] \t    1");
195         System.out.println("2_slices\t\t\tShop's container[2] \t    4");
196         System.out.println("\t\t\t\tContainer[0] \t\t    0");
197
198         System.out.println("\n#################################################################");
199         System.out.println("#################################################################");
200
201
202          //part 5: customer choose packaging material
203         System.out.print("\n\tChoose the type of packaging: "); //if using sc.next()..jangan selang
204         type_pack=sc.next();
205         System.out.print("\tWhat is the height/shape of packaging (Please state the code): ");
206         size_pack=sc.nextDouble();
207         System.out.print("\tWhat is the material used to create the packaging? (Please state the code) : ");
```

*cake.java X | Copy.java | Scanner.class | Exercise1.java

```
205         System.out.print("\tWhat is the height/shape of packaging (Please state the code): ");
206         size_pack=sc.nextDouble();
207         System.out.print("\tWhat is the material used to create the packaging? (Please state the code) : ");
208         mater_pack=sc.nextDouble();
209
210
211
212         //part 6: calculate all the process include
213         price_one_cake= (ans_size1 * ans_code1)+ ans_type1;
214         to_price= (ans_no1*price_one_cake);
215         price_pack= (size_pack*mater_pack)* ans_no1;
216         sum_all= price_pack+ to_price;
217         dis_rec=(0.05*sum_all);
218         pay=(sum_all - dis_rec);
219
220
221
222      //part 7: for print receipt nanti
223         System.out.println("\n\n########################################");
224         System.out.println("\tCUSTOMER'S RECEIPT");
225         System.out.println("\tNAME: " +name);
226         System.out.println("\tDATE OF ORDER: "+ order);
227         System.out.println("\tDATE TO PICK UP: "+ take);
228
229         System.out.println("\n\tDETAILS");
230         System.out.println("\tCODE FOR SIZE OF CAKE: " +ans_size1);  //if want
231         System.out.println("\tCODE FOR CAKE: "+ ans_code1);
232         System.out.println("\tCODE FOR TYPE OF CAKE: "+ ans_type1);
233         System.out.println("\tQUANTITY OF CAKE: "+ ans_no1);
234         System.out.println("\tTYPE OF PACKAGING: "+ type_pack);
235         System.out.println("\tCODE FOR PACKAGING SIZE: "+ size_pack);
236         System.out.println("\tCODE FOR PACKAGING MATERIAL: " + mater_pack);
237
238         System.out.println("\n\tSUBTOTAL: " +sum_all);
239         System.out.printf("\tDISCOUNT RECEIVE: %.1f" ,dis_rec);
240         System.out.printf("\n\tTOTAL PAYMENT: %.1f", pay);
241         System.out.print("\n\n       *Please bring your container\n\t3 days before date of pick up\n\tThank you for purchase from us*");
242         System.out.println("\n\n########################################");
243
244      }
245
246  }
247
```

Writable | Smart Insert

11.OUTPUT

```
<terminated> cake [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe  (22 Dec 2021, 5:01:39 pm – 5:03:22 pm)
                Hi! Welcome to Special Cake
             Please fill the information detail

        Please state your name: NUR SUHAILA BINTI YEOP
        Please state your address location: 153, KAMPUNG KODIANG LAMA DALAM
        Please state your contact number: 0134349430
        Please state the date of order: 22.12.2021
        Please state date to pick up (7 days after date of order): 30.12.2021


#########################################################################################################################
                                        Here's the Menu of Our Shop
#########################################################################################################################
                                        Category 1: Special Choose
#########################################################################################################################

 Size(inch) [code]      Weight (kg)     Height(inch)    Type [code]     Name [code]                     Price (RM)

                                                                        Tiramisu[9]                     94
                                                                        New York Cheese Cake[10]        100
                                                        Baked[40]       Black Forest[11]                106
                                                                        Caramel Cream[7]                82
                                                                        Oreo Cake[8]                    88
                                                                        Old Fashion Chocolate Cake[12]  112

                                                                        Tiramisu[9]                     96
                                                                        New York Cheese Cake[10]        102
     6[6]                0.7             5          Steam[42]       Black Forest[11]                108
                                                                        Caramel Cream[7]                84
                                                                        Oreo Cake[8]                    90
                                                                        Old Fashion Chocolate Cake[12]  114

                                                                        Tiramisu[9]                     114
                                                                        New York Cheese Cake[10]        120
                                                    Ice cream[60]       Black Forest[11]                126
                                                                        Caramel Cream[7]                104
                                                                        Oreo Cake[8]                    108
                                                                        Old Fashion Chocolate Cake[12]  132
#########################################################################################################################

                                                                        Tiramisu[9]                     112
                                                                        New York Cheese Cake[10]        120
```

```
Console  Problems  Debug Shell
<terminated> cake [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe  (22 Dec 2021, 5:01:39 pm – 5:03:22 pm)
#########################################################################################################################

                                                                        Tiramisu[9]                     112
                                                                        New York Cheese Cake[10]        120
                                                        Baked[40]       Black Forest[11]                128
                                                                        Caramel Cream[7]                96
                                                                        Oreo Cake[8]                    104
                                                                        Old Fashion Chocolate Cake[12]  136

                                                                        Tiramisu[9]                     114
                                                                        New York Cheese Cake[10]        122
     8[8]                1.3             5          Steam[42]       Black Forest[11]                130
                                                                        Caramel Cream[7]                98
                                                                        Oreo Cake[8]                    106
                                                                        Old Fashion Chocolate Cake[12]  138

                                                                        Tiramisu[9]                     132
                                                                        New York Cheese Cake[10]        140
                                                    Ice cream[60]       Black Forest[11]                148
                                                                        Caramel Cream[7]                116
                                                                        Oreo Cake[8]                    124
                                                                        Old Fashion Chocolate Cake[12]  136

#########################################################################################################################
#########################################################################################################################


#########################################################################################################################
                                        Category 2: Special Cupcakes
#########################################################################################################################

 Size(inch) [code]      Weight (kg)     Height(inch)    Type [code]     Name [code]                     Price (RM)

                                                                        Banana[1.5]                     4
                                                                        Carrot[2.5]                     6
                                                        Baked[1]        Chocolate[1.0]                  3
                                                                        Vanila[0.5]                     2

                                                                        Banana[1.5]                     4.5
                                                                        Carrot[2.5]                     6.5
     2.0[2]              0.08            1.5        Steam[1.5]      Chocolate[1.0]                  3.5
                                                                        Vanila[0.5]                     2.5
```

```
Console ✕   Problems   Debug Shell
<terminated> cake [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe  (22 Dec 2021, 5:01:39 pm – 5:03:22 pm)
                                                              Vanila[0.5]              2.5

                                                              Banana[1.5]              5
                                                              Carrot[2.5]              7
                                              Ice cream[1]    Chocolate[1.0]           4
                                                              Vanila[0.5]              3
##########################################################################################

                                                              Banana[1.5]              4.75
                                                              Carrot[2.5]              7.25
                                              Baked[1]        Chocolate[1.0]           3.5
                                                              Vanila[0.5]              2.25

                                                              Banana[1.5]              5.25
                                                              Carrot[2.5]              7.75
   2.5[2.5]          0.08          1.5        Steam[1.5]      Chocolate[1.0]           4
                                                              Vanila[0.5]              2.75

                                                              Banana[1.5]              5.75
                                                              Carrot[2.5]              8.25
                                              Ice cream[1]    Chocolate[1.0]           4.5
                                                              Vanila[0.5]              3.25

##########################################################################################
##########################################################################################


#########################################################################################
                                  Category 3: Special Slice
#########################################################################################

 Size(inch) [code]     Shape (kg)     Height(inch)    Type [code]     Name [code]                   Price (RM)

                                                                      Burnt Cheese[3]                  10
                                                                      Red velvet[4]                    10
     2[0]              Triangular        5            Baked[10]       Rainbow[15]                      10
                                                                      Creamy Vanila Fruit Cake[6]      10
                                                                      Chocolate Truffle Cream Cake[13] 10
                                                                      Classic Almond Cake[14]          10

##########################################################################################
##########################################################################################
```

```
        Which size do you want? (Please state the code): 6
        What is the name of cake that you want to order? (Please state the code): 11
        What type of cake do you prefer? (Please state the code): 60
        How many cakes do you want?: 1


##########################################################################################
                              Here's the Packaging Menu of Our Shop
##########################################################################################
                         Packaging for Category 1: Special Choose
##########################################################################################
 Type           Height(inch)/Shape [code]       Decoration colour/colour        Material Used [code]    Price (RM)

                                                        White                    Glass]46]               184
                        4[4]                            Silver                   Clay[35]                140
                                                        Gold                     Wood[35]                44
Cake_Stand                                                                       Aluminium[11]           28

                                                        White                    Glass]46]               230
                        5[5]                            Silver                   Clay[35]                175
                                                        Gold                     Wood[35]                55
                                                                                 Aluminium[11]           35
##############################################################################################
                    Square[1]                           White                    Glass[46]               46
Cake_Board          Rectangle[1]                        Silver                   Clay[35]                        35
                    Round[1]                            Gold                     Wood[7]                         11
                                                                                 Aluminium[11]           7

##############################################################################################
##############################################################################################


####################################################################
                 Packaging for Category 2: Special Cupcake
####################################################################
 Type           Height/code     Material Used [code]    Price (RM)

                                Aluminium foil[2]          2
Box_of_           3[1]          Bagasse Paper[3]           3
6_cups                          Shop's container[8]        8
                                Container[0]               0
```

```
##########################################################################
##########################################################################


##########################################################################
                Packaging for Category 3: Special Slice
##########################################################################
 Type           Height/code     Material Used [code]    Price (RM)

                                Aluminium foil[0.7]         1.4
Box_of_           6[2]          Bagasse Paper[0.5]          1
2_slices                        Shop's container[2]         4
                                Container[0]                0

##########################################################################
##########################################################################

        Choose the type of packaging: Cake_Stand
        What is the height/shape of packaging (Please state the code): 5
        What is the material used to create the packaging? (Please state the code) : 46


##########################################
        CUSTOMER'S RECEIPT
        NAME: NUR SUHAILA BINTI YEOP
        DATE OF ORDER: 22.12.2021
        DATE TO PICK UP: 30.12.2021

        DETAILS
        CODE FOR SIZE OF CAKE: 6
        CODE FOR CAKE: 11
        CODE FOR TYPE OF CAKE: 60
        QUANTITY OF CAKE: 1
        TYPE OF PACKAGING: Cake_Stand
        CODE FOR PACKAGING SIZE: 5.0
        CODE FOR PACKAGING MATERIAL: 46.0

        SUBTOTAL: 356.0
        DISCOUNT RECEIVE: 17.8
        TOTAL PAYMENT: 338.2
```

```
##########################################
        CUSTOMER'S RECEIPT
        NAME: NUR SUHAILA BINTI YEOP
        DATE OF ORDER: 22.12.2021
        DATE TO PICK UP: 30.12.2021

        DETAILS
        CODE FOR SIZE OF CAKE: 6
        CODE FOR CAKE: 11
        CODE FOR TYPE OF CAKE: 60
        QUANTITY OF CAKE: 1
        TYPE OF PACKAGING: Cake_Stand
        CODE FOR PACKAGING SIZE: 5.0
        CODE FOR PACKAGING MATERIAL: 46.0

        SUBTOTAL: 356.0
        DISCOUNT RECEIVE: 17.8
        TOTAL PAYMENT: 338.2

       *Please bring your container
        3 days before date of pick up
        Thank you for purchase from us*

##########################################
```

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FAWATIM NURAL AIN BINTI NOOR ARIS	288408	Rice

1.Identify the problem.

History of Rice

Rice is the seed of the grass species known as Oryza sativa which is Asian rice or less known as Oryza glaberrima, African rice. The term “wild rice" is mainly applied to wild and domesticated species of the genera Zizania and Porteresia, it can also refer to primitive or uncultivated Oryza variants.

Recent genomic evidence suggests that all Asian rice varieties, both indica (long-grain) and japonica (short-grain), are descended from a single domestication event that took place 8,200 to 13,500 years ago in China's Pearl River basin. The middle Yangtze and upper Huai rivers in China are thought to be the two earliest sites of O. sativa production in the country, according to archaeological data. There have been discoveries of rice and farming implements reaching back at least 8,000 years. Over the next 2,000 years, cultivation extended down these rivers. Puddling the soil, which is a process of turning soil into mud in order to prevent too much water from escaping and transplanting seedlings were most likely refined in China. Both operations became firmly rooted in rice growing and are still commonly used today. Rice became truly tamed with the invention of puddling and transplanting.

Culture

Rice is an important aspect of many cultures. In fact, some countries credit rice farming with their civilization's development. It's practically every culture has its unique method of harvesting, preparing, and consuming rice, and that these diverse practices are all part of the world's cultural legacy.

Rice for Cooking

Rice is divided into a few types, which is long-grained, medium-grained, and short-grained. Long-grain rice grains which are rich in amylose it tends to stay intact after cooking, whereas medium-grain rice grains high in amylopectin become sticky. Medium-grain rice is used in sweet foods and a variety of rice dishes. While Thai sticky rice is a type of long-grain rice that is high in amylopectin and is frequently cooked. The most famous food in Japan is sushi, made with stickier short-grain rice; the stickiness allows the rice to keep its shape when cooked.

Preparation of Rice

In some regions where rice packing and storage techniques expose rice to dust and other pollutants, rice is washed or rinsed many times before cooking. In rice, there are some water-soluble elements such as carbohydrates, protein, vitamins, minerals, and lipids. Thus, the nutrient loss can occur while rinsing the rice.

To promote germination, rice can be soaked for as little as 30 minutes or as long as several hours. While for brown rice, it can be soaked in warm water for 20 hours. This procedure, known as germinated brown rice, improves the nutritional content of brown rice by activating enzymes and enhancing amino acids. This approach was developed as part of the United Nations International Year of Rice study. Rice is prepared by steaming or boiling, it absorbs water while it cooks. Rice can be cooked in an amount of water equal to the volume of dry rice or rice also can be cooked in a huge amount of water. Rice cookers, which are widespread globally, can make the process of cooking rice easier.

Quality factor

There are various types of rice available, each with its own set of properties to meet the needs of different consumers. Grain length, stickiness, fragrance, texture, and flavour are all quality criteria. The nutritional value of different varieties of rice may also differ. Rice can be treated as white or brown rice after harvest, impacting flavour, texture, and nutritional content.

Nutrition

Compared to wheat and potatoes, raw and long-grain white rice is a comparatively good source of energy. It contains carbohydrates, calcium, iron, thiamin, pantothenic acid, folate, and vitamin E but lacks in vitamin C, vitamin A, beta-carotene, as well as a significant amount of fibre.

As for brown rice, it contains numerous vitamins and minerals as well as fibre which come from the bran layer that is not polished away to make white rice. For red rice, it is abundant in iron and zinc, whereas black and purple rice are particularly high in protein, fat, and crude fibre.

Coloured rice, such as red, black and purple come from anthocyanin pigments, which are recognised for their free radical scavenging, antioxidant properties, as well as other health advantages.

Different type of rice has different calorie content. For example, 1 cup of cooked rice has a calorie content that varies from 241.8 kcal for medium grain or short-grain white rice to 218.4 kcal for medium grain brown rice. While for long-grain brown rice the calories can be around 216.5 kcal. For ordinary long-grain white rice and 'wild rice,' the calories intake can be around 205.4 kcal to a low of 165.6 kcal.

Rice In Malaysia

Rice is taken as the main food, eaten by Malaysians almost every day even though rice is high in calories. In some households, rice is included as more than one meal a day, such as rice being taken every morning, evening, and night.

If the intake of rice portions is not controlled it can lead to an increase, in the rate of obesity, diabetes, and many more. The majority of Malaysians, are exposed to the risk of many illnesses if they do not take any initiative ways to avoid what is about to come. Some of the initiative ways are jogging or running for 30 minutes, taking a suitable portion of rice, eating rice once a day or many more ways for people with overweight or obese BMI. Vice versa for people with underweight BMI, they need to take an extra portion of rice to keep a normal BMI because underweight BMI also has the same high risk as obese BMI, both can get dangerous illnesses. But we rarely see Malaysian people do any of these initiative ways maybe because they do not have an alarm or motivations to ask them to keep a healthy life, or they do not aware about their intake of rice and how many calories intake for rice must be count and weight gain if they do not burn their calories.

Thus, I decided to make a system like a healthy diet where it can count calories and weight gain and achieve a goal where the users are in a normal BMI and also to suggest which type of rice is suitable for users with underweight, normal, overweight, and obese BMI because both white rice and brown rice have different nutrient content.

2.Understand the problem

- Rice is eaten every day as a meal.
  Source of energy but at the same time it contains high calories and people are suggested to exercise at least twice a week.
- Every household takes a different number of meals.
  Different risk of having illnesses.
- Uncontrolled rice portions can lead to various illnesses.
  People who eat too much rice can lead to fatal illnesses such as cancer and cardiovascular disease because rice contains inorganic arsenic. Else, rice also can increase risk of having 2 types of diabetes.
- The majority of Malaysian people aren't taking any initiative to avoid illnesses that comes from the effect of intake of rice.
- To make Malaysian people get a normal BMI
  Count BMI using formula, BMI = weight/(height^2). Calculation can be incorrect or troublesome for some people.
- Do not have the alarm or motivation to keep a healthy lifestyle.
  It can be hard for someone to keep their fitness goal while dealing with daily life, Therefore, an alarm and motivation can keep them stay focus and healthy.
- Calculate calories intake for rice.
  Count using formula. calories consume = meals per day*serving of rice per meal*calories of rice per serving. Calculation can be incorrect or troublesome for some people.
- Calculate weight gain if calories aren't burned,
  Count using formula, weight gain = calories consume/7700. Some people do not know the formula or they are lazy to make calculation.
- Suggestion type of rice.
  For example, brown rice is more suitable for people who need to diet or lose weight because brown rice contains more dietary fiber compared to white rice. Higher fiber foods caused us to feel fuller longer while consume fewer calories.

3. Identify alternative ways to solve the problem

• Take moderation portion of rice, as moderation is always the best
• Eat rice equals or less than 3 times a day
• Calculate BMI to know which group you are in
• Underweight people are suggested to take white rice
• Overweight and Obese people are suggested to consume brown rice
• Do exercise at least 30 minutes a day
• Set an alarm to do exercise
• Go to gym and get a coach
• Get a nutritionist advice
• Create a system to control your rice intake, calculate BMI, calculate calories consume in rice, advice for you to do exercise, suggest better type of rice, and help to achieve normal BMI

List of Formula Name	Formula
BMI	BMI = weight/(height^2)
Calories Intake	calories consume = meals per day*serving of rice per meal*calories of rice per serving
Weight Gain by Calories Intake	weight gain = calories consume/7700

4. Select the best way to solve the problem from the list of alternative solutions.

• Create a system to control your rice intake, calculate BMI, calculate calories consume in rice, advice for you to do exercise, suggest better type of rice, and help to achieve normal BMI

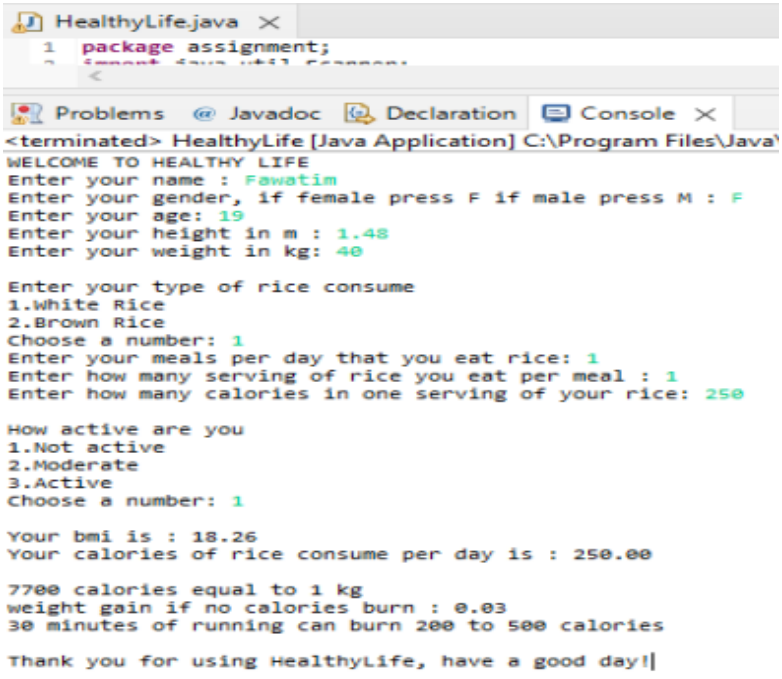
5. List instructions (steps) that enable you to solve the problem using the selected solution.

• Taking the user personal details
• Insert name, age, gender, weight, height
• Making a BMI calculation base on the user weight and height
• Insert number of meals a day, how many serving of rice per meals and calories of rice per 1 serving, type of rice consumed, and active level.
• Calculate rice calories taken by user for a day based on the information given by the user and weight gain.
• Print output to advice user to do exercise

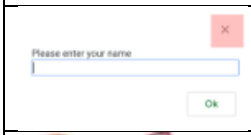
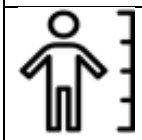
6. Evaluate the solution.

The system will create variables for user to input data. The user needs to insert the personal Information such as name, gender, and age. Then the user needs to input weight in kg and height in m to calculate BMI using formula BMI = weight/(height^2).

User also need to input how many meals taken in a day and how many serving eat per meals to calculate the calories consume and simply know the weight gain if no calories burn by divide calories consume with 7700. Some additional information like rice type and active level are also needed. The system will display all the information the user insert.



7. Algorithm

	Welcome to healthy life
	Gather information • Name
	• Gender
	• Age
	• Height
	• Weight
	• Rice type
	• meals per day
	• Serving of rice per meal
	• calories of rice per serving
	• active level
	Calculate • BMI = weight/ (height^2) • calories consume = meals per day*serving of rice per meal*calories of rice per serving • weight gain = calories consume/7700
	30 minutes of running can burn 200 to 500 calories Thank you for using Healthy Life, have a good day!

8.Pseudocode

Begin

Display “WELCOME TO HEALTHY LIFE”

Read name

Read gender

Read age

Read height

Read weight

Read rice type

Read meals per day

Read serving of rice per meal

Read calories of rice per serving

Read active level

bmi = weight/(height^2)

Output bmi

calories consume = meals per day*serving of rice per meal*calories of rice per serving

Output calories consume

Display “7700 cal equal to 1 kg”

weight gain = calories consume/7700

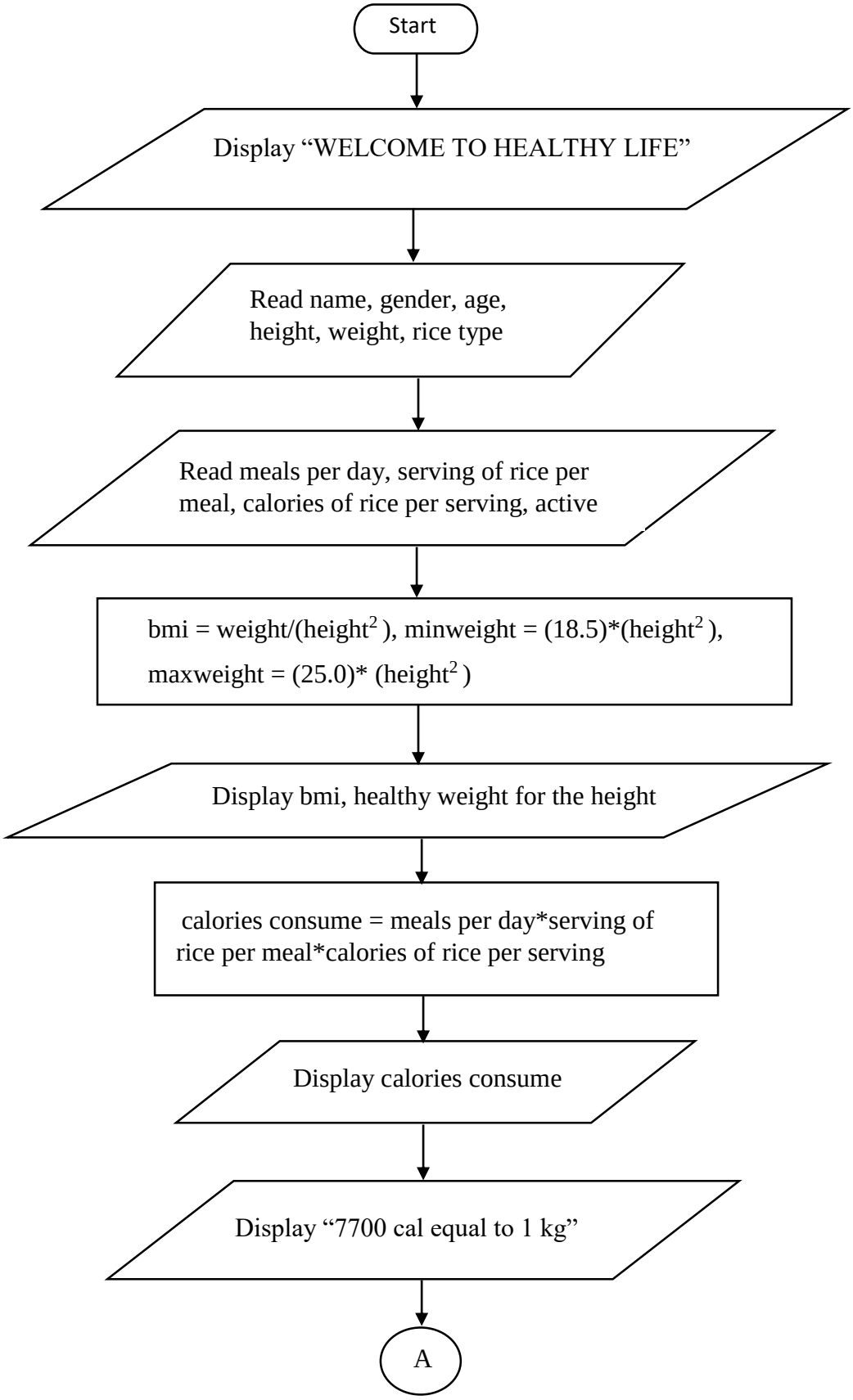
Output weight gain

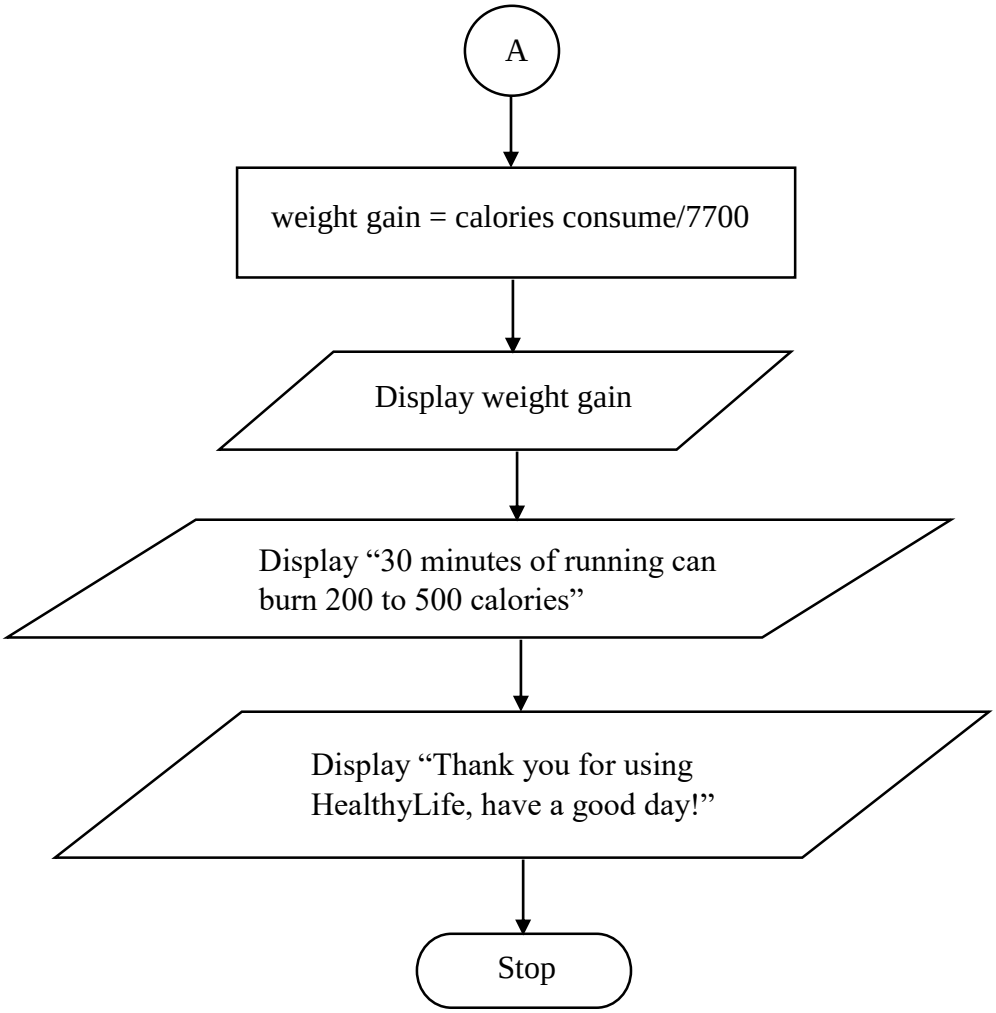
Display “30 minutes of running can burn 200 to 500 calories”

Display “Thank you for using HealthyLife, have a good day!”

End

9.Flowchart


Start
Display “WELCOME TO HEALTHY LIFE”
Read name, gender, age, height, weight, rice type
Read meals per day, serving of rice per meal, calories of rice per serving, active
bmi = weight/(height^2), minweight = (18.5)*(height^2), maxweight = (25.0)* (height^2)
Display bmi, healthy weight for the height
calories consume = meals per day*serving of rice per meal*calories of rice per serving
Display calories consume
Display “7700 cal equal to 1 kg”
A


A
weight gain = calories consume/7700
Display weight gain
Display “30 minutes of running can burn 200 to 500 calories”
Display “Thank you for using HealthyLife, have a good day!”
Stop

10.Coding

```java
package assignment;
import java.util.Scanner;
public class HealthyLife {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        Scanner sc = new Scanner(System.in);

        String name;
        char gender='F';
        double weight, height, bmi, caloriesperserving, caloriesconsume,weightgain;
        double minweight,maxweight;
        int age, mealsperday, servingpermeal, activelevel,ricetype;

        System.out.println("WELCOME TO HEALTHY LIFE");
        System.out.print("Enter your name : ");
        name = sc.nextLine();
        System.out.print("Enter your gender, if female press F if male press M : ");
        gender = sc.next().charAt(0);
        System.out.print("Enter your age: ");
        age = sc.nextInt();
        System.out.print("Enter your height in m : ");
        height = sc.nextDouble();
        System.out.print("Enter your weight in kg: ");
        weight = sc.nextDouble();

        System.out.println();
        System.out.print("Enter your type of rice consume"
                + "\n1.White Rice"
                + "\n2.Brown Rice"
                + "\n3.Purple Rice"
                + "\n4.Black Rice"
                + "\n5.Red Rice"
                + "\nChoose a number: ");
        ricetype = sc.nextInt();
        System.out.println();
        System.out.print("Enter your meals per day that you eat rice: ");
        mealsperday = sc.nextInt();
        System.out.print("Enter how many serving of rice you eat per meal : ");
        servingpermeal = sc.nextInt();
        System.out.print("Enter how many calories in one serving of your rice: ");
        caloriesperserving = sc.nextDouble();

        System.out.println();
        System.out.print("How active are you"
                + "\n1.Not active"
                + "\n2.Moderate"
                + "\n3.Active"
                + "\nChoose a number: ");
        activelevel = sc.nextInt();

        System.out.println();
        bmi = weight/Math.pow(height,2);
        System.out.printf("Your bmi is : %.2f",bmi);

        minweight = (18.5)*Math.pow(height,2);
        maxweight = (25.0)*Math.pow(height,2);

        System.out.printf("%nHealthy weight for the height : %.2fkg - %.2fkg",minweight,maxweight);

        caloriesconsume = caloriesperserving*servingpermeal*mealsperday;
        System.out.printf("%nYour calories of rice consume per day is : %.2f",caloriesconsume);
        System.out.println();

        System.out.print("\n7700 calories equal to 1 kg");
        weightgain = caloriesconsume/7700;
        System.out.printf("%nweight gain if no calories burn : %.2f%n",weightgain);
        System.out.println("30 minutes of running can burn 200 to 500 calories");

        System.out.println();
        System.out.println("Thank you for using HealthyLife, have a good day!");

    }

}
```

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MUHAMMAD IMAN ZULHAKIM BIN MOHD ZULKHORI	288430	Dessert

1. Identify the problem

What is dessert?

Dessert is a course that concludes a meal. The course consists of sweet foods, such as confections, and possibly a beverage such as dessert wine and liqueur. In some parts of the world, such as much of Central Africa and West Africa, and most parts of China, there is no tradition of a dessert course to conclude a meal.

The term dessert can apply to many confections, such as biscuits, cakes, cookies, custards, gelatines, ice creams, pastries, pies, puddings, macaroons, sweet soups, tarts and fruit salad. Fruit is also commonly found in dessert courses because of its naturally occurring sweetness. Some cultures sweeten foods that are more commonly savoury to create desserts.

Etymology

The word "dessert" originated from the French word ‘desservir’, meaning "to clear the table". Its first known use in English was in 1600, in a health education manual entitled Naturall and artificial Directions for Health, written by William Vaughan.

In his A History of Dessert (2013), Michael Krondl explains that it refers to the fact that dessert was served after the table had been cleared of other dishes.

The term dates from the 14th century but attained its current meaning around the beginning of the 20th century, when "service à la française" (setting a variety of dishes on the table at the same time) was replaced with "service à la russe" (presenting a meal in courses).

History

Sweets were fed to the gods in ancient Mesopotamia and ancient India and other ancient civilizations. Dried fruit and honey were probably the first sweeteners used in most of the world, but the spread of sugarcane around the world was essential to the development of dessert.

The Industrial Revolution in Europe and later America caused desserts (and food in general) to be mass-produced, processed, preserved, canned, and packaged. Frozen foods, including desserts, became very popular starting in the 1920s when freezing emerged. These processed foods became a large part of diets in many industrialized nations. Many countries have desserts and foods distinctive to their nations or region.

Ingredients

Sweet desserts usually contain cane sugar, palm sugar, brown sugar, honey, or some types of syrup such as molasses, maple syrup, treacle, or corn syrup. Other common ingredients in Western-style desserts are flour or other starches, Cooking fats such as butter or lard, dairy, eggs, salt, acidic ingredients such as lemon juice, and spices and other flavoring agents such as chocolate, peanut butter, fruits, and nuts. The proportions of these ingredients, along with the preparation methods, play a major part in the consistency, texture, and flavor of the end product.

Sugars contribute moisture and tenderness to baked goods. Flour or starch components serves as a protein and gives the dessert structure. Fats contribute moisture and can enable the development of flaky layers in pastries and pie crusts. The dairy products in baked goods keep the desserts moist. Many desserts also

contain eggs, in order to form custard or to aid in the rising and thickening of a cake-like substance. Egg yolks specifically contribute to the richness of desserts. Egg whites can act as a leavening agent or provide structure. Further innovation in the healthy eating movement has led to more information being available about vegan and gluten-free substitutes for the standard ingredients, as well as replacements for refined sugar.

Desserts can contain many spices and extracts to add a variety of flavors. Salt and acids are added to desserts to balance sweet flavors and create a contrast in flavors. Some desserts are coffee-flavored, for example an iced coffee soufflé or coffee biscuits. Alcohol can also be used as an ingredient, to make alcoholic desserts.

Varieties and elements

Dessert consists of variations of tasted, textures, and appearances. Desserts can be defined as a usually sweeter course that concludes a meal. This definition includes a range of courses ranging from fruits or dried nuts to multi-ingredient cakes and pies. Many cultures have different variations of dessert. In modern times the variations of desserts have usually been passed down or come from geographical regions. This is one cause for the variation of desserts. These are some major categories in which desserts can be placed.

The problem of dealing with desserts

Bakeries always have a lot of leftover products which leads to food waste. This is mainly because they would mass produce their product every day to replenish their stock. They also use the visual of their variety type of product as an advertisement by putting it on display to attract customers. Moreover, bakers face the every-day challenge of baking freshly made desserts. With many items deemed unsellable after 24 hours, bakers dispose their day-old goods as consumers expect abundant supplies of day-fresh dessert. Thus, to have this happen the shop would mass produce their product and it leads to food wastage as at the end of the day, there will be a lot of product that will be thrown into the garbage bins.

Next, the demand unpredictability and challenges in demand forecasting also caused the food wastage in bakeries all across the countries. Each day, except for the regulars at the bakeries, not many people will go to the bakeries. Without any unique product sold, bakeries would not last long while ending up selling nothing they make. This is even more significant during pandemic as most bakeries failed to meet their usual quota of selling their product. Thus, leading to food wastage.

2.Understand the problem

What is Food Waste and its relation to bakeries?

Food loss and waste is food that is not eaten. The causes of food waste or loss are numerous and occur throughout the food system, during production, processing, distribution, retail and food service sales, and consumption. Overall, about one-third of the world's food is thrown away.

In Malaysia, about 16,687.5 tonnes of food waste is generated per day. Despite its bio-degradable characteristics which have high potential to be composted, nearly 80% of the generated food waste is still disposed at the landfill. Food waste is an unceasing problem in our country where households account for 44.5% of the 16,667.5 tonnes of food waste generated in Malaysia daily.

Most of this food waste is classified as still edible, its quantity sufficient enough to provide three meals to over 2 million people a day. Think about the panic buying of bread, rice, and eggs that ended up in our garbage cans during the MCO, going to landfills to produce large amounts of methane.

Regarding the relation of food waste with bakeries, food waste naturally includes those leftover products that were made at bakeries. As a way to attract customers, bakeries always mass produce their product to put it on display. However, at the end of the day, the product that is untouched would be thrown into rubbish bins leading to food wastages as it was deemed as ‘not fresh’ to be sold in the next day.

What can food donation do to help curbs food wastage in bakeries?

What is food donation?

Donating wholesome food for human consumption diverts food waste from landfills and puts food on the table for families in need. Donations of non-perishable and unspoiled perishable food from homes and businesses help stock the shelves at food banks, soup kitchens, pantries, and shelters.

We can be leaders in our communities by collecting unspoiled, healthy food and donating it to our neighbours in need. By donating food, we’re feeding people, not landfills, supporting local communities, and saving all the resources that went into producing that food from going to waste.

While in bakeries, all the leftovers product that were made can be donated to local food banks or directly to people in need to help lessen the food wastage all over the world.

Who can be food donor?

Large manufacturers, supermarket chains, wholesalers, farmers, food brokers, and organized community food drives typically give food to food banks. Restaurants, caterers, corporate dining rooms, hotels, and other food establishments promptly distribute perishable and prepared foods to hungry people in their communities. Many food banks and food rescue organizations will pick up food donations free of charge, saving donors time and money.

As such, bakeries were no exception to it. Bakeries also can be a food donor as a way to lessen food wastages. This will surely solve the problem of bakeries all across the countries as they can just donate their products to local food banks near them or to the NGOs who involve themselves in food.

Who can we donate to?

There are many NGOs all around the countries that helps in raising awareness in food wastages which provides food bank to help people who do not have any food to eat. As an example, Yayasan Food Bank Malaysia is a charity-based Non-Governmental Organization (NGO) that collects and distributes food items and necessities to the B40 and below as an organization to take the lead in managing and coordinating Food Bank initiatives as part of the "Inisiatif Keprihatinan Rakyat".

There is also Food Aid Foundation, it is the first organization in Malaysia to rescue perishable and non-perishable excess food. Established in 2013, their mission is to reduced food wastage and alleviate hunger and malnourishment in Malaysia. They collect and distribute surplus food on a daily basis to their beneficiaries consisting of welfare and charitable homes, shelters, poor families, destitute, other NGO's, refugee communities and the soup kitchen.

Other than that, bakeries can also directly donate their product directly to homeless people or poor people around the vicinity of their shop.

Food that is suitable for donation

Many non-perishable and unspoiled perishable foods can be donated to local food banks, soup kitchens, pantries, and shelters if the transaction is managed properly. We can check with our local food bank or food rescue operation to find out what items they will accept. We can contact our local health department for more information on how to safely donate food.

Homemade baked goods that do not need refrigeration to remain safe (such as cookies, cakes, fruit pies, and breads) may be received from donors. Next, he donation of commercially canned, boxed, and otherwise packaged foods is encouraged. Furthermore, licensed food establishments are encouraged to donate surplus foods to donated food distributing organizations. This is because licensed food establishments have commercial-grade equipment, unlike many donor kitchens, these may safely include foods that have gone through typical multiple food preparation steps and handled with the same consideration for safety as the food sold to customers such as restaurant and bakeries.

Lastly, perishable foods past the original manufacturer's "sell by" (or "best if used by") date are suitable for donation, but not foods past a "use by" date.

Food that is unsuitable for donation

Certain foods are not suitable for donation because of safety concerns. These foods include, home canned, vacuum-packed or pickled foods, foods in soiled containers, perishable foods past a "use by" date, unless frozen, foods in sharply dented or rusty cans, foods in opened or torn containers exposing the food to potential contamination, unpasteurized milk, foods with an "off" odour, foods prepared, cooked, cooled, or reheated at home (except for baked goods).

Other items not suitable for donation include foods that have been temperature abused; foods that have been served to a customer's table; spoiled foods; foods exposed to potential contamination by severe package damage; and sharply dented or rusty cans.

What can monitor sales do to help curbing food wastage especially in bakeries?

Monitor the food and beverage orders to see what's hot and what's not. Accurate sales forecasting allows us to manage our inventory, effectively create a baking schedule, and even adjust our marketing based on customer trends. Sales patterns tell a story we might otherwise miss.

Another variable we need to keep track of while running our restaurant is the amount of traffic we have. This we will need to measure both on a daily basis, and especially during holidays, weekends, and festival seasons.

Although this data might not make much sense to us right away, it will definitely give us a clear picture of our customer traffic in the long run.

When we analyse previous years' findings, especially during holidays and festive seasons, we will start to get a clearer picture of how much traffic to expect in the coming years. This will help us plan our inventory in a better way and maximize our profits while reducing wastage.

3. Identify alternative ways to solve the problem

- Create a system which need the user to enter the amount of product made and sold. Then, the system will compute all the products sold and leftovers. Leftovers can be donated to the local food banks or religious places like mosques and temples.
- Create a system that calculates the average of sold products in a month to find the amount of product that should be made daily, so that no leftovers can be made.
- Create a system that limits the amount of product that can be bought by customers and the system will also compound the customers for the amount of leftover product.
- Products can be kept in the refrigerator and be heard for the next day.

4.Select the best way to solve the problem from the list of alternative solutions.

Create a system which need the user to enter the product sold from last month, amount of product made and sold on the day. Then, it will calculate the average of sold products in a month to find the amount of product that should be made daily, so that no leftovers can be made. Next, the system will calculate the leftover products by subtracting the product made and product sold. Leftovers will be donated equally to the local food banks or homeless people.

5.List instructions (steps) that enable you to solve the problem using the selected solution.

1. Staff will input the amount of product sold last month and amount of product made and sold for tart, pie, and pudding.
2. The system then will calculate all the leftover products in order to find how many products will be donated.
3. The system will also calculate the average product sold daily from last month to find the product that should be made daily.
4. From the leftover products found, the system then will divide it equally to the place the leftover products will be donated to.

Amounts of leftovers- From the products that were made leftover product can be calculated by subtracting the product made and product sold.

Name	Formula
Leftovers of tarts	tartLeft = tartMade-tartSold
Leftovers of pies	pieLeft=pieMade-pieSold
Leftovers of puddings	puddingLeft= puddingMade-puddingSold

Donation of leftovers – The leftover products will be divided equally between the food banks and homeless people.

Name	Formula
Dividing tarts by 2	tartDonate=tartLeft/2
Dividing pies by 2	pieDonate=pieLeft/2
Dividing puddings by 2	puddingDonate=puddingLeft/2

Average of product daily last month – by finding the average product sold for each product from last month we can find the product needed to be made daily so there are no leftovers will be made.

Name	Formula
Average of product sold daily last month	avgTartMade=tartSoldLastMonth/30
	avgPieMade=pieSoldLastMonth/30
	avgPuddingMade=puddingSoldLastMonth/30

6.Evaluate the solution

- This solution can help bakeries lessen the food wastage that happens in their store all around countries.
- The leftovers can be donated and not be wasted.
- Bakeries will have easier times making their product without having less leftovers.
- Bakeries will also have an easier time to distribute the donation of their produce to their donation place.
- Bakeries also can monitor their product easily, as staff needs to input the data daily.

7. Algorithm

- Declare the amount of all the product sold last month and amount of product made, sold, left and donate for tart, pie, and pudding.
- Input the amount of product sold last month and amount of product made and sold for tart, pie, and pudding.
- Calculate the amounts of product left and donate (equally for each place) and the average of product sold daily last month for tart, pie, and pudding.
- Output the amount of product that should be made this month based on average product sold daily last month.
- Output the amount of product that have been donated to food bank and homeless people.

8.Pseudocode

Start

Declare tartSoldLastMonth, pieSoldLastMonth, puddingSoldLastMonth, tartMade, pieMade, puddingMade, tartSold, pieSold, puddingSold, tartLeft, pieLeft, puddingLeft, tartDonate, pieDonate, puddingDonate, avgTartMade, avgPieMade, avgPuddingMade,

//User input product sold last month

Output “Please enter the amounts of product sold last month:"

Output “Please enter the amounts of Tarts sold last month:”

Input tartSoldLastMonth

Output “Please enter the amounts of Pies sold last month:”

Input pieSoldLastMonth

Output “Please enter the amounts of Puddings sold last month:”

Input puddingSoldLastMonth

//User input product made today

Output “Please enter the amounts of Tarts made today:”

Input tartMade

Output “Please enter the amounts of Pies made today:”

Input pieMade

Output “Please enter the amounts of Puddings made today:”

Input puddingMade

//User input product sold today

Output “Please enter the amounts of Tarts sold today:”

Input tartSold

Output “Please enter the amounts of Pies sold today:”

Input pieSold

Output “Please enter the amounts of Puddings sold today:”

Input puddingSold

//Calculation for leftovers product

Calculate tarLeft=tartMade-tarSold

Calculate pieLeft=pieMade-pieSold

Calculate puddingLeft=puddingMade-puddingSold

//Calculation for product donated to be equally distributed

Calculate tartDonate=tartLeft/2

Calculate pieDonate=pieLeft/2

Calculate puddingDonate=puddingLeft/2

//Calculation for average product sold daily last month

Calculate avgTartMade=tartSoldLastMonth/30

Calculate avgPieMade=pieSoldLastMonth/30

Calculate avgPuddingMade=puddingSoldLastMonth/30

//Output the amount of product that should be made this month based on average product sold daily last month

Output "Based on the average product sold daily last month:"

Output "Amounts of Tarts made today should be only" avgTartMade

Output "Amounts of Pies made today should be only" avgPieMade

Output "Amounts of Puddings today made should be only" avgPuddingMade

//Output the amount of product donated to food bank

Output "Amount of product donated to food bank:"

Output "Tarts donated is "tartsDonate

Output "Pies donated is "pieDonate

Output "Puddings donated is "puddingDonate

//Output the amount of product donated to homeless people

Output "Amount of product donated to homeless people:"

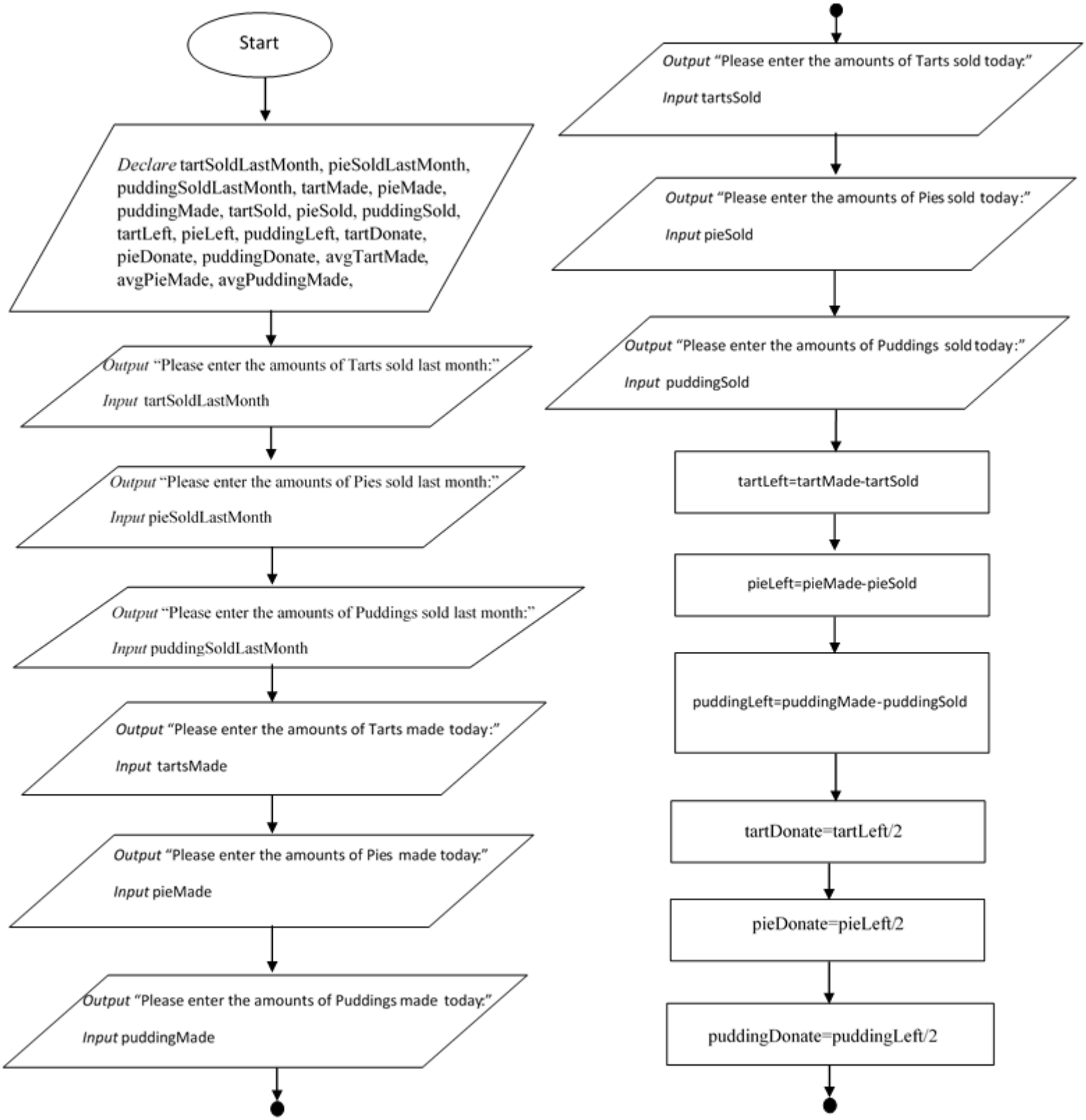
Output "Tarts donated is "tartsDonate

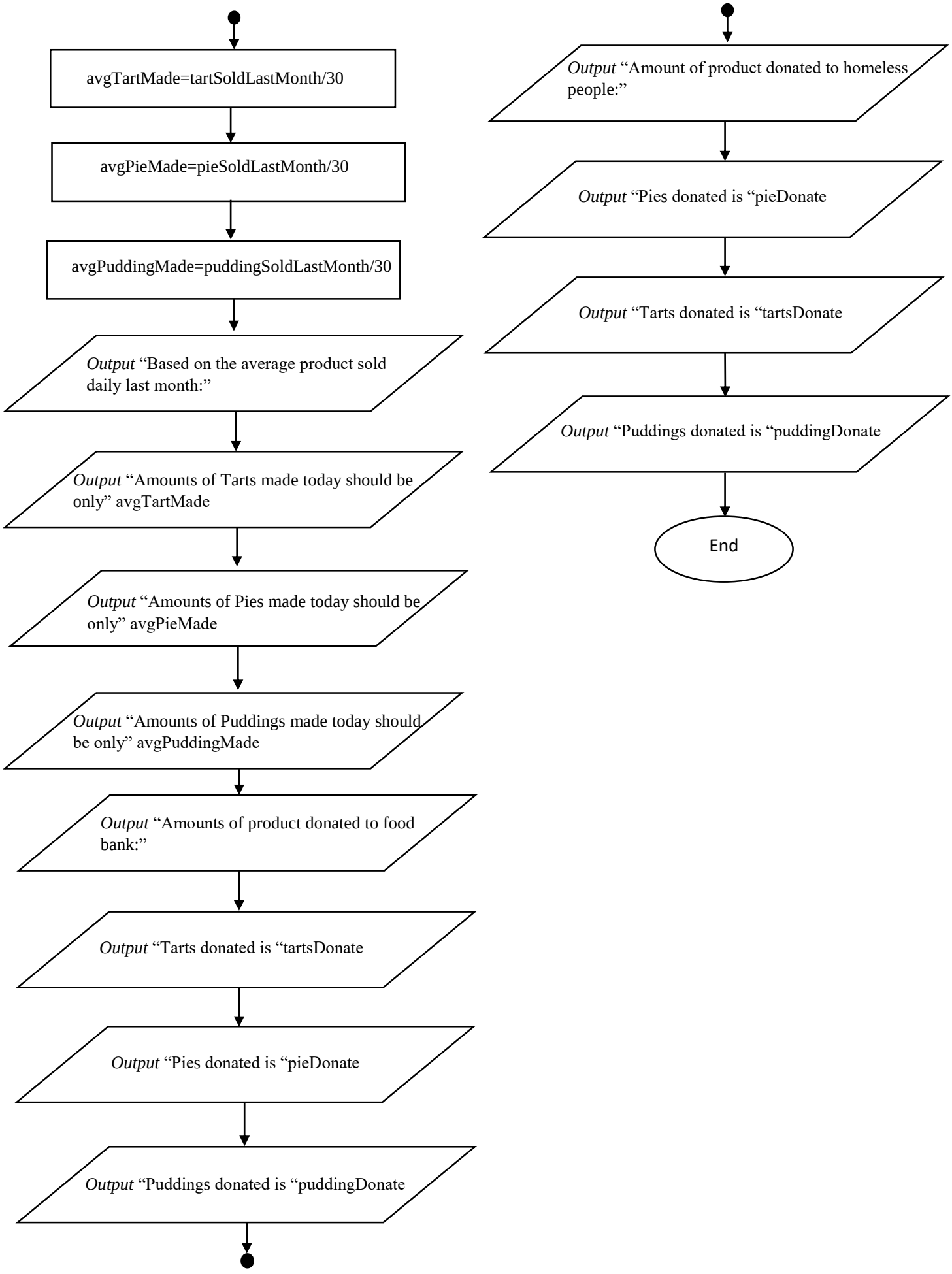
Output "Pies donated is "pieDonate

Output "Puddings donated is "puddingDonate

End

9.Flowchart


Start
Declare tartSoldLastMonth, pieSoldLastMonth, puddingSoldLastMonth, tartMade, pieMade, puddingMade, tartSold, pieSold, puddingSold, tartLeft, pieLeft, puddingLeft, tartDonate, pieDonate, puddingDonate, avgTartMade, avgPieMade, avgPuddingMade,
Output "Please enter the amounts of Tarts sold last month:"
Input tartSoldLastMonth
Output "Please enter the amounts of Pies sold last month:"
Input pieSoldLastMonth
Output "Please enter the amounts of Puddings sold last month:"
Input puddingSoldLastMonth
Output "Please enter the amounts of Tarts made today:"
Input tartsMade
Output "Please enter the amounts of Pies made today:"
Input pieMade
Output "Please enter the amounts of Puddings made today:"
Input puddingMade
Output "Please enter the amounts of Tarts sold today:"
Input tartsSold
Output "Please enter the amounts of Pies sold today:"
Input pieSold
Output "Please enter the amounts of Puddings sold today:"
Input puddingSold
tartLeft=tartMade-tartSold
pieLeft=pieMade-pieSold
puddingLeft=puddingMade-puddingSold
tartDonate=tartLeft/2
pieDonate=pieLeft/2
puddingDonate=puddingLeft/2


avgTartMade=tartSoldLastMonth/30
avgPieMade=pieSoldLastMonth/30
avgPuddingMade=puddingSoldLastMonth/30
Output "Based on the average product sold daily last month:"
Output "Amounts of Tarts made today should be only" avgTartMade
Output "Amounts of Pies made today should be only" avgPieMade
Output "Amounts of Puddings made today should be only" avgPuddingMade
Output "Amounts of product donated to food bank:"
Output "Tarts donated is "tartsDonate
Output "Pies donated is "pieDonate
Output "Puddings donated is "puddingDonate
Output "Amount of product donated to homeless people:"
Output "Pies donated is "pieDonate
Output "Tarts donated is "tartsDonate
Output "Puddings donated is "puddingDonate
End

10.CODING

```java
package Assignment;
import java.util.Scanner;
public class Dessert {

    public static void main(String[] args) {
        Scanner sc= new Scanner (System.in);

        //declare all the variables
        double  tartSoldLastMonth, pieSoldLastMonth, puddingSoldLastMonth,
                avgTartMade, avgPieMade, avgPuddingMade;
        int     tartMade, pieMade, puddingMade,
                tartSold, pieSold, puddingSold,
                tartLeft, pieLeft, puddingLeft,
                tartDonate, pieDonate, puddingDonate;

        System.out.println("----------------------Welcome to UUM bakery product made, leftovers and donation system----------------------");

      //User input product sold last month
        System.out.println("\nPlease enter the amounts of Tarts sold last month:");
        tartSoldLastMonth = sc.nextDouble();

        System.out.println("Please enter the amounts of Pies sold last month:");
        pieSoldLastMonth   = sc.nextDouble();

        System.out.println("Please enter the amounts of Puddings sold last month:");
        puddingSoldLastMonth = sc.nextDouble();

      //User input product made today
        System.out.println("\nPlease enter the amounts of Tarts made today:");
        tartMade = sc.nextInt();

        System.out.println("Please enter the amounts of Pies made today:");
        pieMade   = sc.nextInt();

        System.out.println("Please enter the amounts of Puddings made today:");
        puddingMade = sc.nextInt();

      //User input product sold today
        System.out.println("Please enter the amounts of Tarts sold today:");
        tartSold = sc.nextInt();

        System.out.println("Please enter the amounts of Pies sold today:");
        pieSold = sc.nextInt();

      //Calculation for leftovers product
        tartLeft= tartMade-tartSold;
        pieLeft=pieMade-pieSold;
        puddingLeft=puddingMade-puddingSold;

      //Calculation for product donated to be equally distributed
        tartDonate=tartLeft/2;
        pieDonate=pieLeft/2;
        puddingDonate=puddingLeft/2;

      //Calculation for average product sold daily last month
        avgTartMade=tartSoldLastMonth/30;
        avgPieMade=pieSoldLastMonth/30;
        avgPuddingMade=puddingSoldLastMonth/30;

      //Output the amount of product that should be made this month based on average product sold daily last month
        System.out.println("\n\nBased on the average sold product last month: ");

        System.out.println("Amounts of Tarts made today should be only  " + avgTartMade);

        System.out.println("Amounts of Pies made today should be only  " + avgPieMade);

        System.out.println("Amounts of Puddings today made should be only  " + avgPuddingMade);

        //Output the amount of product donated to food bank
        System.out.println("\nAmounts of product donated to food bank:");

        System.out.println("Tarts donated is " + tartDonate);

        System.out.println("Pies donated is " +pieDonate);

        System.out.println("Puddings donated is " +puddingDonate);

        //Output the amount of product donated to homeless people
        System.out.println("\nAmount of product donated to homeless people:");

        System.out.println("Tarts donated is " + tartDonate);

        System.out.println("Pie donated is " +pieDonate);
         System.out.println("Pudding donated is " +puddingDonate);


    }

}
```

11.Output

```
----------------------Welcome to UUM bakery product made, leftovers and donation system--------------------

Please enter the amounts of Tarts sold last month:
1500
Please enter the amounts of Pies sold last month:
1500
Please enter the amounts of Puddings sold last month:
1500

Please enter the amounts of Tarts made today:
50
Please enter the amounts of Pies made today:
50
Please enter the amounts of Puddings made today:
50
Please enter the amounts of Tarts sold today:
45
Please enter the amounts of Pies sold today:
40
Please enter the amounts of Puddings sold today:
35


Based on the average sold product last month:
Amounts of Tarts made today should be only  50.0
Amounts of Pies made today should be only  50.0
Amounts of Puddings today made should be only  50.0

Amounts of product donated to food bank:
Tarts donated is 2
Pies donated is 5
Puddings donated is 7

Amount of product donated to homeless people:
Tarts donated is 2
Pie donated is 5
Pudding donated is 7
```

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NURUL AZURIN BINTI TOKIMAN	288448	Fast Food

1.Identify the Problem

Fast food is a type of mass-produced cuisine intended for commercial resale with a significant emphasis on "**speed of service**". This fast food was developed as a business tactic to accommodate the increasing number of busy passengers, travellers, and salaried employees who do not have time to sit and wait for their meals at restaurants. Customers with tight time constraints don't feel overwhelmed by having to wait for their food to be cooked on the spot by prioritising the speed of service (as expected from a traditional "sit-down" restaurant). Regular restaurants will not promise that the food ordered will be ready in a short time. It depends on the number of customers and the number of employees in the restaurant. The more employees, the faster customers get their orders. But not all restaurant operators can afford to employ many employees. Therefore, fast food restaurants will be the choice of most people who have a shortage of time to eat.

The fastest form of "fast food" consists of pre-cooked meals kept in a state of readiness for the customer's arrival. For example, the food provided includes fried chicken, burgers, pizza, potatoes, porridge, and various types of drinks that are easy to eat no matter where the customer is. Customers will be served in a short time. Customers only need a few minutes to get their order, and then they can choose to eat at the branch or want to take the food away and eat elsewhere according to their convenience. Other fast-food outlets, especially hamburger shops (McDonald's, Burger King, etc.), use mass-prepared ingredients (bread and condiments in bags, frozen beef bread, washed, pre-sliced vegetables, or both but hamburgers and fries are always cooked fresh (or at least recently) and installed "to order" (as in a diner).

While various forms of food can be "prepared rapidly," the term "fast food" refers to food sold in restaurants or supermarkets that contains frozen, heated, or pre-cooked components and is provided to consumers in packed form for take-out or take-home. Fast food restaurants have traditionally been distinguished by their ability to serve food through drive thru. There may be branches or kiosks that do not provide shelter or seating for customers to eat there, but customers can still enjoy the fast food by getting it on a drive thru**. Drive through or drive thru** (sensational version of the word "through") is a type of take-out service that allows consumers to buy things without having to leave their vehicle. Jordan Martin invented this format in the 1930s in the United States, and it has subsequently spread to other countries. The first drive-through banking facility in America was constructed by Hillcrest State Bank in Dallas, Texas. It's a structure across from SMU that was designed by George Dahl and constructed in the 1920s. The Grand National Bank of St. Louis, Missouri, utilised a drive window teller for the second time in 1930. At the time, the driving cashier only accepted deposits.

Orders are usually taken in person at the window using a microphone. A drive-in differs from a drive-in in several ways; for example, in a drive-in, cars form a line and move in one direction and rarely park, whereas a drive-in allows cars to park next to each other, food is usually delivered to the window by a waiter known as a carhop, and customers can eat while remaining in their parked car. During peak periods, however, passers-by may switch to a "order in the window, then park in a designated space" model, in which customers will receive their food from the attendant when it is ready to be served, in order to maintain queues and avoid traffic flow problems. As a result, the two service models are perceived to have a relationship.

The concept of selling ready-to-eat meals has a strong link to urban development. In many emerging city homes, there is insufficient space or necessary food preparation equipment. Additionally, cooking fuel can be as expensive as the produce you buy. Because it was costly, frying food in a flaming oil barrel proved risky. Homeowners are concerned that a raging kitchen fire may "quickly consume the

entire neighbourhood." As a result, city dwellers are encouraged to purchase pre-cooked meat or starches like bread or noodles. Cities in Ancient Rome had street booths, which were big counters with containers in the centre where food or beverages were served. Americans began to spend and purchase more during the post-World War II economic boom, as the economy grew swiftly, and the consumerism culture flourished. As a result of this new desire to own it all, coupled with the steps women take while men leave, both members of the household began working outside the home. Eating out, which was formerly considered a luxury, has become more common, and eventually a need. For lunch and supper, workers and working families require quick service and low-cost cuisine.

The total demand for fast food, whether through counter service, take-out, drive-thru, or delivery, is always increasing, especially in urban areas. Fast service delivery, good taste suitable for all ages, and having a wide range of options at affordable prices make customers eager and not shy about repeating the order and trying all the new menus. Although the whole country, including ours, is now hit by the COVID-19 epidemic, it is not a barrier for fast food enthusiasts to get their favourite foods. Although they are not allowed to leave the house at will, they can place orders online and just wait for the food to arrive in front of the house.

In addition, fast food store owners and operators need to take care of every service provided to customers so that they are satisfied and want to recommend our premises to friends and the public. Many customers make fast food restaurants their favourite place because there are many facilities available, such as a comfortable place, ample parking, air conditioning, drive-through service, and free Wi-Fi. So, they can work as comfortably as with their families. Therefore, fast food store owners need to calculate daily profits and plan expenses well so that employees' salaries can be given on time and there is no unreasonable pay cut. With so many customers, it certainly requires a lot of cooking materials, a lot of workers, and a lot of water and electricity consumption. But fast-food store owners still manually calculate daily profits even though they know there is an increase in customers. This could have a detrimental effect in the future. In addition to employee negligence, incorrect calculations can also cause losses to store owners. Fast food restaurants need to have a special system to calculate their daily income in order to continue business in the future.

2.Understand the problem

Rising prices of goods at present will affect food traders in particular. The issue of rising prices of goods, especially raw materials such as chicken, vegetables, and chicken eggs, has become one of the hot topics discussed on social media. Price increases that exceed the "normal" level, or "excessive" price increases, are difficult to accept, especially by consumers, especially those with low incomes. The merchants who run the restaurant business need more spending capital to run the business as usual on a daily basis. This definitely burdens restaurant owners, especially those who are new to running a business. The cause of the increase in the price of goods is the increase in the price of petrol. Petroleum is used by vehicles and factories to move machinery. The increase in the price of petrol will cause an increase in production and transportation costs. Manufacturers are forced to raise the prices of their products. In addition, demand exceeds supply during festive seasons such as Hari Raya and Chinese New Year, so consumers will spend a lot in preparation for their respective festivals. High demand will cause producers to increase the price of essential goods. For example, the price of chicken, meat, ingredients for making biscuits and others increases. Spending more than necessary by consumers leads to an increase in demand. Next, the cause of the increase in raw material prices is the attitude of traders who are concerned about profit. Traders are increasingly taking advantage, especially during the festive season. Various techniques are used by traders to make a profit, such as giving fake discounts and gifts that are supposedly attractive. As a result, restaurant operators have to spend a lot of capital to provide the necessities for their business. They need to be smart in comparing prices and buying goods in bulk to get a cheaper price than if the purchase is made in small quantities.

Next, to avoid huge losses, food traders need to be smart about finding reliable suppliers. The fast food restaurant business definitely requires an adequate and quality supply of raw materials on a daily basis. The cooking ingredients used, such as chicken, meat, and vegetables, are definitely needed in a fresh condition so that the food produced is tasty, clean, and will not harm customers. Traders can lose a lot of money if they choose the wrong supplier. This is due to the fact that some suppliers are middlemen who make large profits in exchange for selling items at a higher price. The trader's capital will undoubtedly rise as a result of this. High supplier pricing do not always imply high material quality. There are still irresponsible vendors that mix new and old cooking materials only to get rid of their stock. Furthermore, traders must ensure that the supplier is a trusted company with a guarantee that raw materials will always be available in sufficient amounts when clients order in higher quantities than usual. Fast food restaurant owners need to ensure that the amount of ingredients needed, along with the price, is affordable so that they can still achieve a substantial daily profit. In order to achieve a high level of daily profit, they need to ensure that the selling price is higher than the capital price. Therefore, capital calculations for cooking materials, employee salaries, shop rent, and various bills need to be calculated correctly to avoid an increase in debt and a decrease in employee salaries.

In addition, traders need to set the quantity of food that needs to be cooked on a daily basis to avoid increased food waste. Merchants need to keep an eye on the times when customers are crowded. For example, at lunch time, employees definitely take the opportunity to get food quickly because their break time is short. In addition, customers are crowded on weekends or school holidays. Many parents bring their children to get their favourite food. The same goes for teenagers, who make fast food restaurants their place to hang out with friends, release stress from studying, and so on. Customers certainly like restaurants that have a variety of menus. So, for restaurant traders who want to prepare a variety of menus, they need a lot of cooking ingredients. The need for a lot of cooking ingredients certainly requires a lot of capital. In addition to the high cost of capital, they also need to think about employee salaries, store rent, and the various bills that need to be settled. Therefore, traders must ensure that every calculation made is accurate.

There may be some fast-food restaurant operators who are less skilled at calculations and need a system that can help them make calculations accurately and quickly. This will make it easier for traders to calculate their daily budget.

3. Identify alternative ways to solve the problem

- Hire an employee to calculate the required capital and profits for each day.

Pros	Cons
computational work becomes faster and easier by acquiring assistants in the computational process	need to invest more money to pay extra employees

- Make calculations using an online application that is already available and free.

Pros	Cons
no need to spend more money to pay extra employees and easy to use without having to take a long time to learn how to use it	cannot be used when experiencing poor internet access or having internet connection problems especially on rainy days

- Produce systems for the personal use of fast-food store operators to calculate all shop needs, employee salaries, profits, and losses.

Pros	Cons
easier to use, saves time, money and durable.	needs to be upgraded as the number of customers increases so that the system is able to function properly

4. Select the best way to solve the problem from the list of alternative solution.

- Produce a system for the personal use of fast food shop operators to calculate daily income taking into account gross profit and net profit.

- This method will simplify the calculations in the fast food business without requiring more budget to pay extra employees and is easily accessible even with internet connection problems.

5. List instructions (steps) that enable you to solve the problem using the selected solution.

a. Enter the username.

Username	Delicious Bistro (Nurul)

b.Enter the day and date of the day.

Day	Saturday
Date	18/12/2021

c.State the number of types of fast food and beverages available.

No. of types of fast food available	5
No. of types of beverages available	3

d.List the types of food prepared that day.

Available fast food	• Fried Chicken • Burger • Porridge • Nasi Lemak • Fries/Wedges
Available beverages	• Chocolate • Coffee • Juice

e.Enter the total price of the ingredients needed for cooking and making the drinks. This is known as capital.

f.Enter the total sales price earn on that day.

g.Calculate the gross profit.

Profit	Calculation
Gross profit	Sales price – capital

h.Enter total employee’s salary

i.Enter store rental costs

j.Enter electric bill price

k.Enter water bill price

l.Calculate total bill price

Bill	Calculation
Total bill	Electric bill + water bill

m.Calculate hidden costs

Costs	Calculation
Hidden costs	Employee’s salary + store rental costs + total bill price

n.Calculate net profit

Profit	Calculation
Net profit	Gross Profit – hidden costs

o.Display gross profit and net profit

6. Evaluate the solution

This method should be used daily to calculate the daily profit earned taking into account the gross profit and net profit can then be recorded in a special log book for future reference. With this, the employee’s salary can also be given fairly and will not add to the debt of the trader by much. As for employees' salaries, traders need to issue payment receipts as proof and make copies to avoid various other problems. To get more profit, merchants need to add various menus and hold promotions on certain days to attract more customers.

7. Algorithm

1) Start
2) Enter the username.
3) Enter the day and date
4) Enter the number of types of fast food and beverages available.
5) Enter the types of food prepared that day.
6) Enter the total price of the ingredients needed(capital).
7) Enter the total sales price earn on that day
8) Calculate the gross profit by using formula Gross profit = Sales price – capital.
9) Display gross profit
10) Enter total employee's salary
11) Enter store rental costs
12) Enter electric bill price
13) Enter water bill price
14) Calculate total bill price by using formula Total bill price = Electric bill price + water bill price
15) Calculate hidden costs by using formula Hidden Costs = Employee's salary + store rental costs + total bill price
16) Calculate net profit by using formula Net profit = Gross Profit – hidden costs
17) Display the net profits.
18) Finish

8. Pseudocode

Start

Enter the username

Enter the day and date

Enter the number of types of fast food and beverages available

Enter the types of food prepared that day

Enter the total price of the ingredients needed(capital)

Enter the total sales price earn on that day

Calculate the gross profit by using formula

Gross profit = Sales price – capital

Display gross profit

Enter total employee's salary

Enter store rental costs

Enter electric bill price

Enter water bill price

Calculate total bill price by using formula

Total bill price = Electric bill price + water bill price

Calculate hidden costs by using formula

Hidden Costs = Employee's salary + store rental costs + total bill price

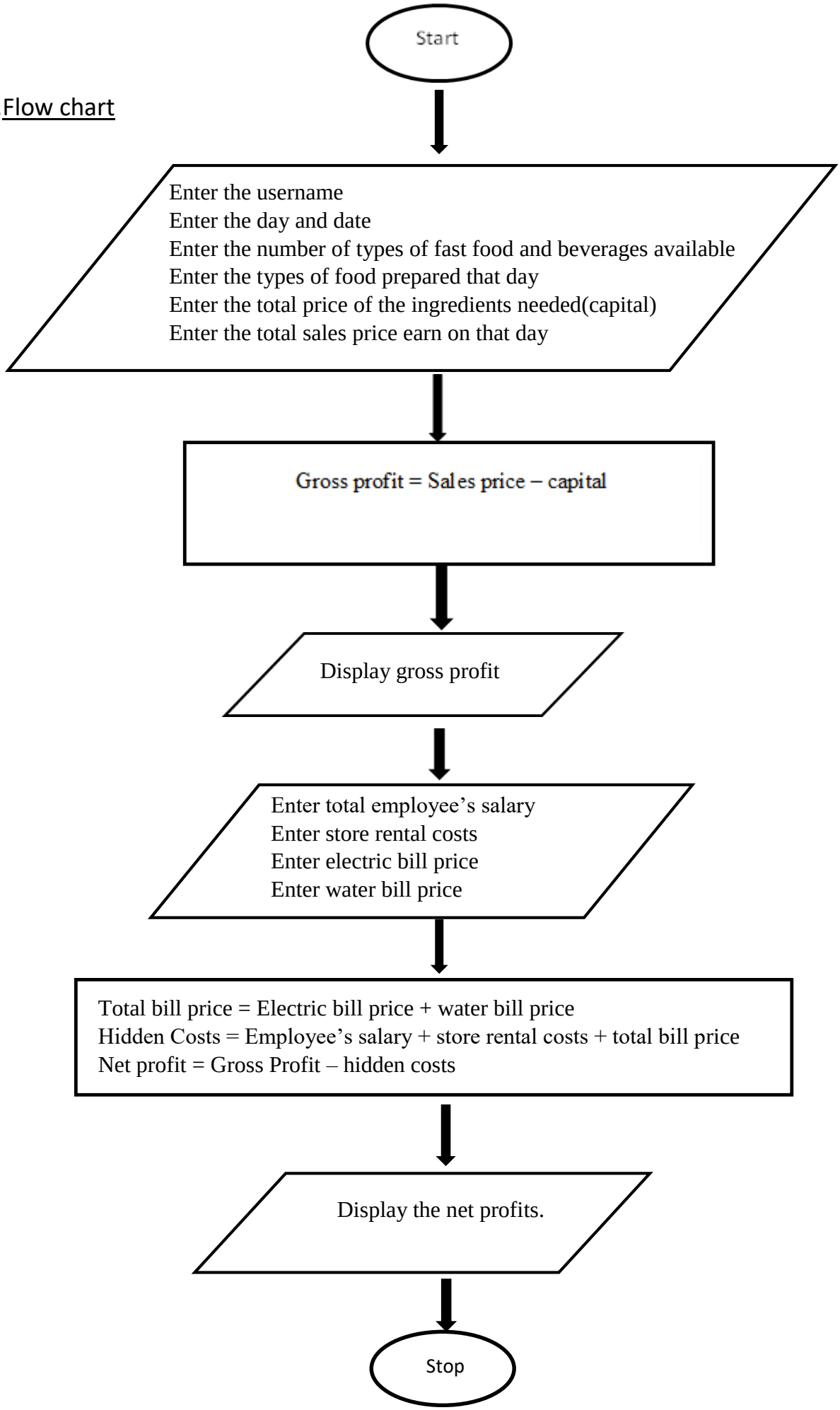
Calculate net profit by using formula

Net profit = Gross Profit – hidden costs

Display the net profits.

Stop

9.Flow chart


Start
Enter the username
Enter the day and date
Enter the number of types of fast food and beverages available
Enter the types of food prepared that day
Enter the total price of the ingredients needed(capital)
Enter the total sales price earn on that day
Gross profit = Sales price – capital
Display gross profit
Enter total employee's salary
Enter store rental costs
Enter electric bill price
Enter water bill price
Total bill price = Electric bill price + water bill price
Hidden Costs = Employee's salary + store rental costs + total bill price
Net profit = Gross Profit – hidden costs
Display the net profits.
Stop

10.Coding

```
package project;
import java.util.Scanner;
public class FastFood {

	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner sc = new Scanner(System.in);
		 String username;
		 String day,date;
		 int foodType, beverageType;
		 String foodPrepared;
		 double
capital,salePrice,grossProfit,salary,bill1,bill2,totalBillPrice,rentalCosts,hiddenCos
ts,netProfits;


System.out.println("=================================================================
==========================================");
		 System.out.println("                                    WELCOME TO LAZAT
SEGERA RESTAURANT!                                    ");

System.out.println("=================================================================
==========================================");
		 System.out.println("Do you want to know your profit amount today?");
		 System.out.println("You need to enter all the details below.");
		 System.out.println();
		//user need to enter their name, day and date
		System.out.println("Username : ");
		username = sc.nextLine();
		System.out.println("Day : ");
		day = sc.nextLine();
		System.out.println("Date: ");
		date = sc.nextLine();
		//user need to enter how much the available fast food and beverage for
that day
		System.out.println("Number of available fast food : ");
		foodType = sc.nextInt();
		System.out.println("Number of available beverage : ");
		beverageType = sc.nextInt();
		//user list the fast foods and beverages
		System.out.println("Available fast food and beverage: ");
		foodPrepared = sc.next();
		//the user enters the total price of the ingredients purchased for
cooking and making the drinks. This is also called as capital.
		System.out.println("Enter total price for ingredient needed(capital) :
RM ");
		capital=sc.nextDouble();
		//the user enters the total sales price earned on that day.
		System.out.println("Enter total selling price : RM ");
		salePrice=sc.nextDouble();
		//calculate the gross profit
		grossProfit = salePrice - capital;
```

```
            System.out.printf("Your gross profit for today is RM%.2f" ,
grossProfit);
            //calculate the hidden costs
            System.out.println("\nEnter total employee's salary : RM");
            salary=sc.nextDouble();

            System.out.println("Enter store rental costs : RM");
            rentalCosts=sc.nextDouble();

            System.out.println("Enter electric bill price : RM");
            bill1=sc.nextDouble();

            System.out.println("Enter water bill price : RM");
            bill2=sc.nextDouble();

            totalBillPrice = bill1 + bill2;
            System.out.printf("Total bill price : RM%.2f " , totalBillPrice);

            hiddenCosts = salary + rentalCosts +  totalBillPrice;
            System.out.printf("\nYour hidden costs is RM%.2f" , hiddenCosts);

            //calculate the net profit
            netProfits = grossProfit - hiddenCosts;
            System.out.printf("\nYour net profit for today is RM%.2f " ,
netProfits);

            System.out.println();
            System.out.println("Summary<3");

            System.out.println("\nUsername : " + username);
            System.out.println("Day : " + day);
            System.out.println("Date: " + date);
            System.out.println("Number of available fast food : " + foodType);
            System.out.println("Number of available beverage : " + beverageType);
            System.out.println("Available fast food and beverage: " + foodPrepared
);
            System.out.println("Total price for ingredient needed(capital) : RM " +
capital);
            System.out.println("Total sale price : RM " + salePrice);
            System.out.printf("Gross profit for today is RM%.2f" , grossProfit);
            System.out.printf("\nNet profit for today is RM%.2f " , netProfits);


      }

}
```

11.Output

```
================================================================================
====================
                                WELCOME TO LAZAT SEGERA RESTAURANT!
================================================================================
====================
Do you want to know your profit amount today?
You need to enter all the details below.

Username :
Azurin
Day :
Khamis
Date:
16/12/2021
Number of available fast food :
3
Number of available beverage :
2
Available fast food and beverage:
Burger,FriedChicken,Fries,ChocolateSmothies,CoffeeIce
Enter total price for ingredient needed(capital) : RM
256.8
Enter total selling price : RM
589.5
Your gross profit for today is RM332.70
Enter total employee's salary : RM
200
Enter store rental costs : RM
11.30
Enter electric bill price : RM
5.20
Enter water bill price : RM
4.30
Total bill price : RM9.50
Your hidden costs is RM220.80
Your net profit for today is RM111.90

Summary<3

Username : Azurin
Day : Khamis
Date: 16/12/2021
Number of available fast food : 3
Number of available beverage : 2
Available fast food and beverage:
Burger,FriedChicken,Fries,ChocolateSmothies,CoffeeIce
Total price for ingredient needed(capital) : RM 256.8
Total sale price : RM 589.5
Gross profit for today is RM332.70
Net profit for today is RM111.90
```

NUR ADILA BINTI MOHD NASRI	288438	FRUIT

"You should avoid rinsing and then storing produce because it creates a perfect, wet habitat for bacteria to grow. Too much moisture can cause fruits and vegetables to go bad more quickly."

1. Identify the problem

a. What you should know about Fruit
   - So based on wikipedia a fruit is the seed-bearing structure in flowering plants that is formed from the ovary after flowering.
   - A fruit results from the fertilizing and maturing of one or more flowers.
   - Fruit is eaten both fresh and as jams, marmalade and other fruit preserves.
   - Fruits are also used for socializing and gift-giving in the form of fruit baskets and fruit bouquets.
   - All fruits benefit from proper post harvest care, and in many fruits, the plant hormone ethylene causes ripening.
   - Therefore, maintaining most fruits in an efficient cold chain is optimal for post harvest storage, with the aim of extending and ensuring shelf life.
   - Fruits are an important part of a healthy eating pattern and the source of many vital nutrients, including potassium, folate (folic acid), and antioxidants including polyphenols.
   - The nutrients in fruit are vital for overall health and maintenance of body systems.

b. How to take care of a food and you
   - Some fruit in supermarket isn't washed
   - So it should be rinsed before eating. This recommendation also applies to produce with rinds or skins that are not eaten. It should be done just before preparing or eating to avoid premature spoilage.
   - All cut, peeled, or cooked fruits and vegetables should be refrigerated within two hours. After a certain time, harmful bacteria may grow on them and increase the risk of foodborne illness.
   - Any fruit or 100% fruit juice counts as part of the Fruit Group. Fruits may be fresh, frozen, canned, or dried/dehydrated, and may be whole, cut-up, pureed, or cooked. At least half of the recommended amount of fruit should come from whole fruit, rather than 100% fruit juice.

c. The storage of fruits

- Some fruits have the shortest shelf life. And it wouldnt stay fresh for long enough. But it varied for every type of fruit.
- Moreover it also varied if they were to be put in different conditions such as at room temperature (top of your counter), in the refrigerator or in a freezer.
- Such as when a fruit is left on the kitchen counter, it's rotten within a week but when it is put into the fridge those fruits can provide a good nutrition for months.
- We can choose to control and delay the ripening of fruits
- Ripening fruits tend to spoil easily
- Constant cycle of tossing spoiled fruit in the garbage every week only to replace them with new ones, is a bad habit that everyone should stop doing. So it's best to make it as a fertilizer after a few stages.

2. Understand the problem

- Some fruit in supermarket isn't washed
    - Wash or rinse only before preparing/eating.
    - Soak fruits in 5 mins except berries
    - Rinse with cold water
    - Pat dry
- Peeled fruits in the refrigerator should only be stored for less than 2 hours.
    - As harmful bacteria will start to grow on it.
- Some fruits have the shortest shelf life. And it wouldnt stay fresh for long enough. But it varied for every type of fruit.
    - Provide/Look up fruit shelf life chart
- Moreover it also varied if they were to be put in different conditions such as at room temperature (top of your counter), in the refrigerator or in the freezer.
    - Count shelf life/fruit stay fresh when fruits is in the freezer, refrigerator or at room temperature
- Ripening a fruit
    - Best Around 20C
    - Expose to sun
- Controlling/Delay ripening of food
    - Lower the temperature
    - Provide less oxygen
    - Using synthetic compounds
    - Delayed from one to two weeks
- Ripening food tends to spoil easily. Constant cycle of tossing bad fruit in the garbage every week only to replace them with new ones, is a bad habit that everyone should stop doing.
    - Send a food spoiled and claim voucher for next fruit purchase with us
    - fruit waste is used as fertilizer by
        - Just dig near a small plant mud
        - Add fruits waste
        - Cover it with mud
        - Water daily and it will become organic manure and give power to the plant after two or more weeks

3. Identify alternative ways to solve the problem

- Create a system for customer, staff, manager
- For a customer system it will allow users to buy fruits directly from suppliers where customers can buy fruits online or by walk in. They can check the price for each fruit for every kilogram. Then proceed if they want to continue to order where they need to key in the total kilogram they are going to buy. System will calculate the price of fruit. And if they have received any discount code, they can also key in to the system.
- System saves data of the user. Including their favorite fruits. And suggest fruit based on their data if customers were up to losing/gaining weight or just to normalise a healthy lifestyle.
- System lists out the fruit package that has enough nutrients for customers who want to diet, or a package that covers for a family that lasts for a month.
- System then calculates the price after discount. Then customers can key in the delivery location if they choose to use our delivery system. Then again, the system will check the total price including for the delivery service.
- Moreover the system will show when is the expected item delivered.
- When customers received the item ordered, the can check the details of the fruit received on the systems by key in the code into the system
- Customers can check whether they stored their fruit in the refrigerator, how long would it last to.
- System can also have a part where customers acknowledge how to get the overall benefits from the fruit. Such as how they should take care of their fruit. When they should eat their fruit. As we all know, ripened fruit can easily spoil.
- System will have a part where it can suggest based on our favourite food the best way or time to have your fruit.
- Lastly, customers can also claim a 5 percent voucher in exchange for 500g of spoiled fruit.
- For a staff system, it has functions where the staff can update about the ongoing fruit from which it is planted/picked by putting a code.
- Staff also will update the name and code of fruits on the system and its details. It will linked directly to customer system.
- They can check their salary and the system will have a part where they let staff key in hours and the system will calculate expected salary based on how long they want to work over time.

- In the manager system, they can key in and the system will calculate the total modal they plan from plant, planting, growing, picking and preparing of fruits.
- They also key in the salary for workers and they can have bonuses based on the sales the company made. Then
- Based on this data, System will calculate the price for each fruit.
- System compares the price from the company and the price other companies assign.

4. Select the best way to solve the problem

- Create a system which allows users to buy fruits directly from suppliers where customers can buy fruits online or by walk in. They can check the price for each fruit for every kilogram. Then proceed if they want to continue to order where they need to key in the total kilogram they are going to buy. System will calculate the price of fruit. And if they have received any discount code, they can also key in to the system.
- System then calculates the price after discount. Then customers can key in the delivery location if they choose to use our delivery system. Then again, the system will check the total price including for the delivery service.
- When customers received the item ordered, the can check the details of the fruit received on the systems by key in the code into the system
- Customers can check whether they stored their fruit in the refrigerator, how long would it last to.
- Lastly, customers can also claim a 5 percent voucher in exchange for 500g of spoiled fruit.

5. List instructions (steps) that enable you to solve the problem using the selected solution.

- Customer will input the date then check the fruit price
- System will show the fruit price and ask customer if they want to proceed to order fruits
- Customers input the fruit name, key in the total weight for their order in kilograms then voucher percentage, delivery location.
- System will calculate the total price based on user input, after discount and after including delivery charges
- User input the fruit name and code to check the details of the fruit bought
- System shows the fruit's resistance and durability in 3 conditions: room temperature, refrigerator and freezer.
- Customers can claim a 5 percent voucher for every 500g of spoiled fruit sent to the shop.

Name	Formula	keyword
Price for fruit and the fruit weight	totalorder = fruitprice * kilogram;	totalorder
Total price after discount	totalorder1 = (totalorder - ((percentage * totalorder) / 100))	percentage = peratusdiskaun
Total price including delivery fee	total = totalorder1 + cajpenghantaran;	total
Total voucher customer will received	voucher = gram/500	5 percent voucher

6. Evaluate the solution.

- This solution can help customer to know when is the best time to eat the fruit/and know when the food is spoiled
- This solution also can help customers to help them plan when they want to eat the fruits. So it's best to delay the ripening of food to prevent food spoiling.
- Help the world to lessen the waste. And recycle it in a more earthly way.

7. Algorithm

Step 1 : Start

Step 2 : Create a variable

Step 3 : Customer Enter the date

Step 4 : System will print the fruit price per kilogram when customer enter the name or the fruit code

Step 5 : Customer choose to proceed the order

Step 6 : Customer will Enter the fruits name and kilogram they want

Step 7 : System will calculate the total fruit price

Step 8 : Customer will input the percentage of discount they have and system will calculate the total price after discount

Step 9 : Customer will enter the delivery location and the system will display the location distance, delivery fee and total payment including the delivery fee

Step 10 : System display Thank you

Step 11 : After customer got their order, the system asked if customer wanted to fruit details

Step 12 : Customers will enter the fruit name and code. Then they were asked if they wanted to check fruit in RTP/Refrigerator/Freezer, then the system would print out the fruit to last long in different conditions with the durability of fruit.

Step 13 : For customer who giving spoiled fruit, they can claim 5 percent discount for every 500g where the spoiled fruit will be weighted first

Step 14 : System will Calculate how many vouchers customers can get and print the voucher. Only one voucher can be used for every payment.

Step 15 : System print Thank You

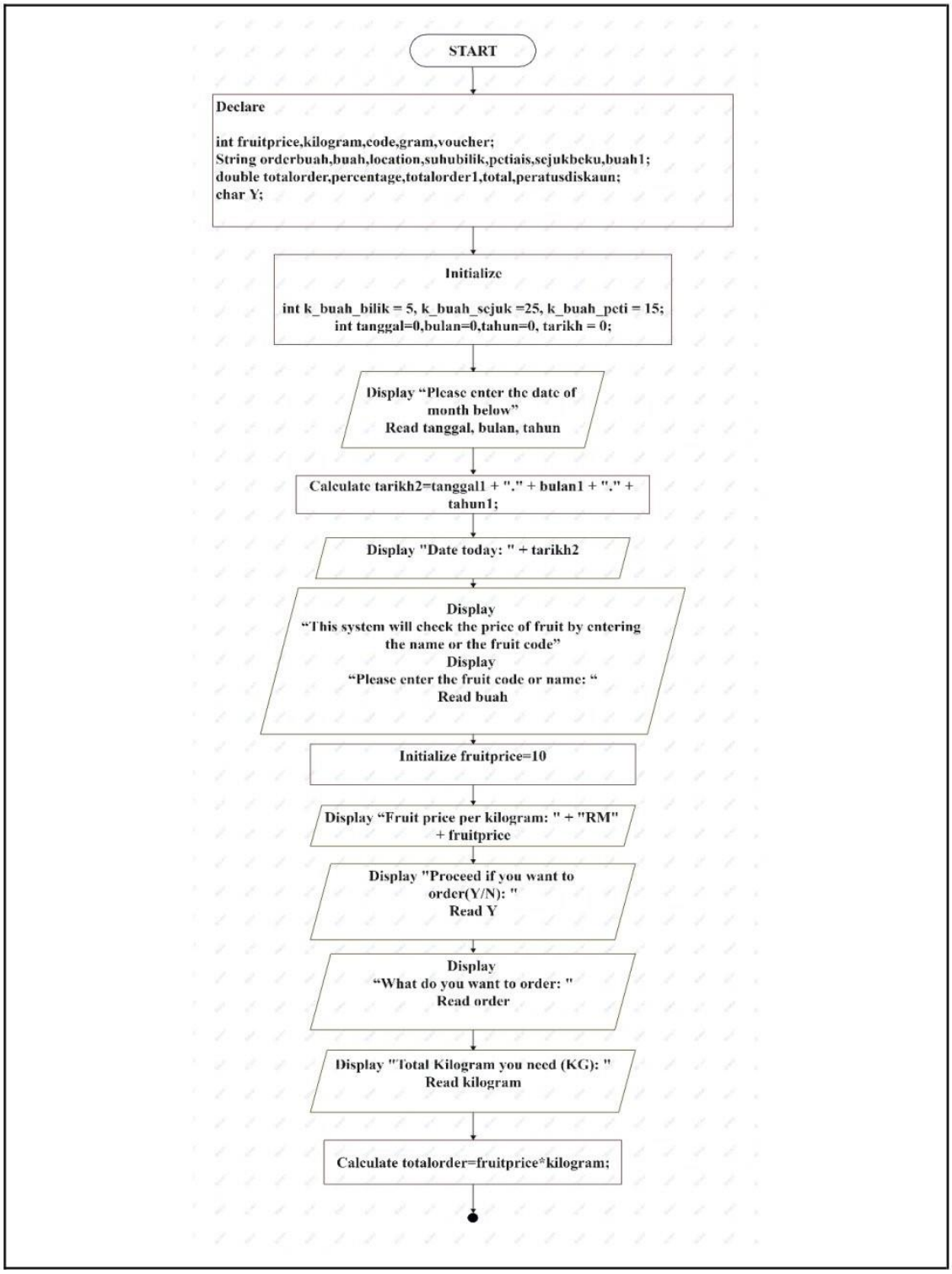
8. Pseudocode

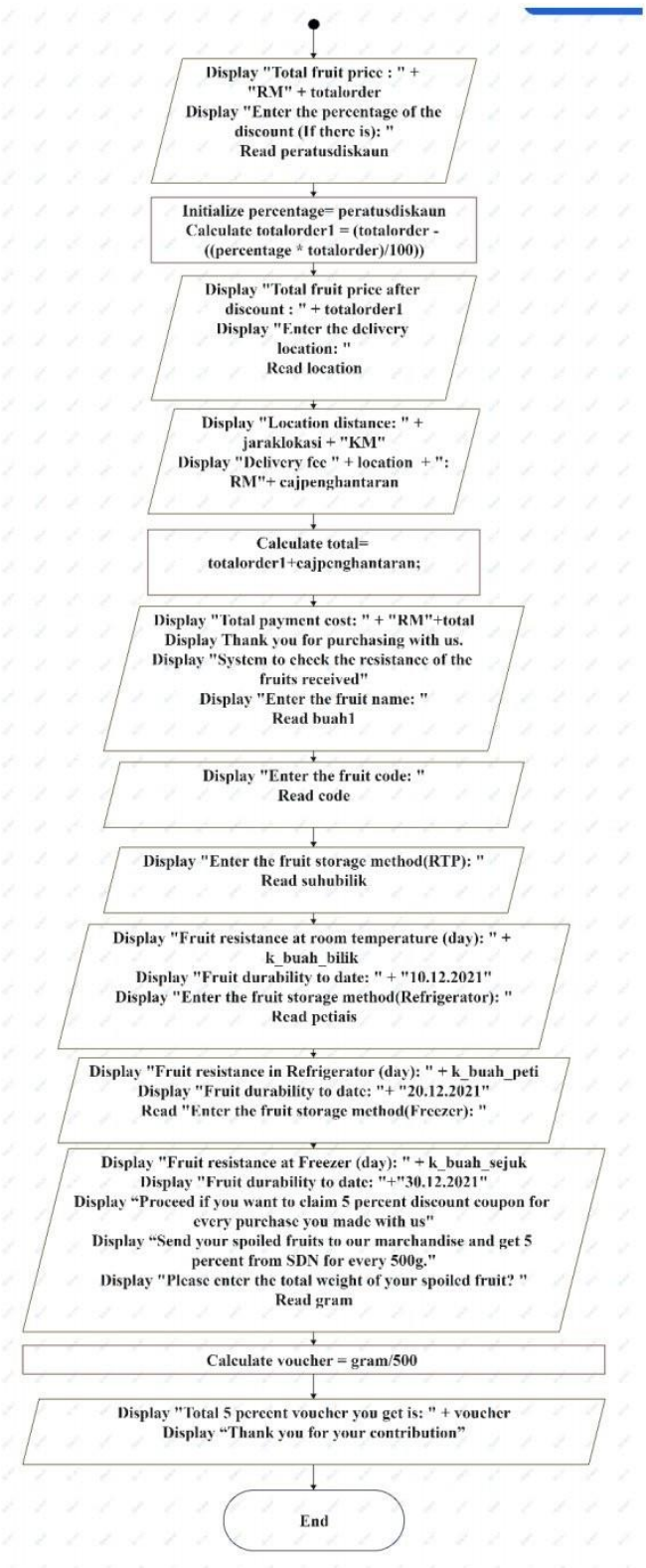
```
Begin
    Declare
        int fruitprice,kilogram,code,gram,voucher;
        String orderbuah,buah,location,suhubilik,petiais,sejukbeku,buah1;
        double totalorder,percentage,totalorder1,total,peratusdiskaun;
        char Y;

    Initialize
        k_buah_bilik = 5, k_buah_sejuk = 25, k_buah_peti = 15, tanggal=0, bulan=0,
        tahun=0, tarikh = 0,jaraklokasi=4,cajpenghantaran=5
    Display “Please enter the date of month below”
    Read tanggal, bulan, tahun
    Calculate tarikh2=tanggal1 + "." + bulan1 + "." + tahun1;
    Display "Date today: " + tarikh2
    Display “This system will check the price of fruit by entering the name or the fruit
    code”
    Display “Please enter the fruit code or name: “
    Read buah
    Initialize fruitprice=10
    Display “Fruit price per kilogram: " + "RM" + fruitprice
    Display "Proceed if you want to order(Y/N): "
    Read Y
    Display “What do you want to order: "
    Read order
    Display "Total Kilogram you need (KG): "
    Read kilogram
    Calculate totalorder=fruitprice*kilogram;
```

```
Display "Total fruit price : " + "RM" + totalorder
Display "Enter the percentage of the discount (If there is): "
Read peratusdiskaun
Initialize percentage= peratusdiskaun
Calculate totalorder1 = (totalorder - ((percentage * totalorder)/100))
Display "Total fruit price after discount : " + totalorder1
Display "Enter the delivery location: "
Read location
Display "Location distance: " + jaraklokasi + "KM"
Display "Delivery fee " + location  + ": RM"+ cajpenghantaran
Calculate total= totalorder1+cajpenghantaran;
Display "Total payment cost: " + "RM"+total
Display Thank you for purchasing with us.

Display "System to check the resistance of the fruits received"
Display "Enter the fruit name: "
Read buah1
Display "Enter the fruit code: "
Read code
Display "Enter the fruit storage method(RTP): "
Read suhubilik
Display "Fruit resistance at room temperature (day): " + k_buah_bilik
Display "Fruit durability to date: " + "10.12.2021"
Display "Enter the fruit storage method(Refrigerator): "
Read petiais
Display "Fruit resistance in Refrigerator (day): " + k_buah_peti
Display "Fruit durability to date: "+ "20.12.2021"
Read "Enter the fruit storage method(Freezer): "
Display "Fruit resistance at Freezer (day): " + k_buah_sejuk
Display "Fruit durability to date: "+"30.12.2021"
```

```
        Display “Proceed if you want to claim 5 percent discount coupon for every purchase you made with us"
        Display “Send your spoiled fruits to our marchandise and get 5 percent from SDN for every 500g."
        Display "Please enter the total weight of your spoiled fruit? "
        Read gram
        Calculate voucher = gram/500
        Display "Total 5 percent voucher you get is: " + voucher
        Display “Thank you for your contribution”
End
```

9. Flow Chart


START
Declare
int fruitprice,kilogram,code,gram,voucher;
String orderbuah,buah,location,suhubilik,pctiais,sejukbeku,buah1;
double totalorder,percentage,totalorder1,total,peratusdiskaun;
char Y;
Initialize
int k_buah_bilik = 5, k_buah_sejuk =25, k_buah_peti = 15;
int tanggal=0,bulan=0,tahun=0, tarikh = 0;
Display "Please enter the date of month below"
Read tanggal, bulan, tahun
Calculate tarikh2=tanggal1 + "." + bulan1 + "." + tahun1;
Display "Date today: " + tarikh2
Display
"This system will check the price of fruit by entering the name or the fruit code"
Display
"Please enter the fruit code or name: "
Read buah
Initialize fruitprice=10
Display "Fruit price per kilogram: " + "RM" + fruitprice
Display "Proceed if you want to order(Y/N): "
Read Y
Display
"What do you want to order: "
Read order
Display "Total Kilogram you need (KG): "
Read kilogram
Calculate totalorder=fruitprice*kilogram;


Display "Total fruit price : " + "RM" + totalorder
Display "Enter the percentage of the discount (If there is): "
Read peratusdiskaun
Initialize percentage= peratusdiskaun
Calculate totalorder1 = (totalorder - ((percentage * totalorder)/100))
Display "Total fruit price after discount : " + totalorder1
Display "Enter the delivery location: "
Read location
Display "Location distance: " + jaraklokasi + "KM"
Display "Delivery fee " + location + ": RM"+ cajpenghantaran
Calculate total= totalorder1+cajpenghantaran;
Display "Total payment cost: " + "RM"+total
Display Thank you for purchasing with us.
Display "System to check the resistance of the fruits received"
Display "Enter the fruit name: "
Read buah1
Display "Enter the fruit code: "
Read code
Display "Enter the fruit storage method(RTP): "
Read suhubilik
Display "Fruit resistance at room temperature (day): " + k_buah_bilik
Display "Fruit durability to date: " + "10.12.2021"
Display "Enter the fruit storage method(Refrigerator): "
Read pctiais
Display "Fruit resistance in Refrigerator (day): " + k_buah_peti
Display "Fruit durability to date: "+ "20.12.2021"
Read "Enter the fruit storage method(Freezer): "
Display "Fruit resistance at Freezer (day): " + k_buah_sejuk
Display "Fruit durability to date: "+"30.12.2021"
Display "Proceed if you want to claim 5 percent discount coupon for every purchase you made with us"
Display "Send your spoiled fruits to our marchandise and get 5 percent from SDN for every 500g."
Display "Please enter the total weight of your spoiled fruit? "
Read gram
Calculate voucher = gram/500
Display "Total 5 percent voucher you get is: " + voucher
Display "Thank you for your contribution"
End

10. Coding

Coding :

```
package assignmentOne;
import java.util.Scanner;
public class E_commerce_customer {

    public static void main(String[] args) {
        // TODO Auto-generated method stub



        Scanner input=new Scanner(System.in);

        int fruitprice,kilogram,code,gram,voucher;
        String orderbuah,buah,location,suhubilik,petiais,sejukbeku,buah1;
        double totalorder,percentage,totalorder1,total,peratusdiskaun;
        char Y;


        //initialize
        int k_buah_bilik = 5, k_buah_sejuk = 25, k_buah_peti = 15, tanggal=0, bulan=0, tahun=0, tarikh = 0,jaraklokasi=4,cajpenghantaran=5;



        //Tarikh hari user input
        System.out.println("Please enter the date of month below");
        System.out.print("Date: ");
        tanggal=input.nextInt();
        System.out.print("Month: ");
        bulan=input.nextInt();
        System.out.print("Year: ");
        tahun=input.nextInt();

        //tarikh2= tanggal1+bulan1+tahun1;
        String tarikh2=Integer.toString(tarikh),tanggal1=Integer.toString(tanggal),bulan1=Integer.toString(bulan),tahun1=String.valueOf(tahun);

        tarikh2=tanggal1 + "." + bulan1+"." + tahun1;

        System.out.println("Date today: " + tarikh2);

    //check harga buah
        //System manager - Manager input code berserta nama buah dan harga
        System.out.println("This system will check the price of fruit by entering the name or the fruit code");
        System.out.print("Please enter the fruit code or name: ");
        buah=input.next();
        fruitprice=10;
        System.out.println("Fruit price per kilogram: " + "RM" + fruitprice);

    //user proceed order
        System.out.print("Proceed if you want to order(Y/N): ");
        Y=input.next().charAt(0);

    //system taking order
        System.out.print("What do you want to order: ");
        orderbuah=input.next();
        System.out.print("Total Kilogram you need (KG): ");
        kilogram=input.nextInt();
```

```
//Detect the price and kilogram
    totalorder=fruitprice*kilogram;
    System.out.println("Total fruit price : " + "RM" + totalorder);

//discount from the spoiled fruit voucher
    System.out.print("Enter the percentage of the discount (If there is): ");
    peratusdiskaun=input.nextDouble();

    percentage= peratusdiskaun; // detect dri kod diskaun
    totalorder1 = (totalorder - ((percentage * totalorder) / 100));

    System.out.println("Total fruit price after discount : " + totalorder1);

    System.out.print("Enter the delivery location: ");
    location=input.nextLine();
    location=input.nextLine();


//Jarak perjalanan dan delivery fee
    //detect from manager system for the distance and price based on distance

    System.out.println("Location distance: " + jaraklokasi + "KM");
    System.out.println("Delivery fee " + location  + ": RM" + cajpenghantaran);

    total= totalorder1+cajpenghantaran;

//system check the total cost
    System.out.println("Total payment cost: " + "RM" + total);
    System.out.println("Thank you for purchasing with us.");


    System.out.println("System to check the resistance of the fruits received");

//System check the fruit details


    System.out.print("Enter the fruit name: ");
    buah1=input.nextLine();
    //System manager-code and name of fruit
    //tarikh depends on manager system

    System.out.print("Enter the fruit code: ");
    code=input.nextInt();//(6 number) Code buah terletak pada setiap buah merujuk kepada tarikh iya dipetik/ketahann dlm pelbagai keadaan

//Check details
    //suhu bilik
    System.out.println("\n");
    System.out.print("Enter the fruit storage method(RTP): ");

    suhubilik=input.next();
    System.out.println("Fruit resistance at room temperature (day): " + k_buah_bilik );
    System.out.println("Fruit durability to date: " + "10.12.2021");
```

```
        //peti ais
        System.out.println("\n");
        // ketahanan buah dalam peti ais dan tarikh sehingga ianya tahan
        System.out.print("Enter the fruit storage method(Refrigerator): ");

        petiais=input.next();
        //petiais=input.next();
        System.out.println("Fruit resistance in Refrigerator (day): " + k_buah_peti);
        System.out.println("Fruit durability to date: "+ "20.12.2021");

    //Sejuk beku
        System.out.println("\n");
        System.out.print("Enter the fruit storage method(Freezer): ");

        sejukbeku=input.next();
        //sejukbeku=input.next();
        System.out.println("Fruit resistance at Freezer (day): " + k_buah_sejuk);
        System.out.println("Fruit durability to date: "+"30.12.2021");


        System.out.println("\n");

    //claim coupon discount

        System.out.println("\nProceed if you want to claim 5 percent discount coupon for every purchase you made with us");

        System.out.println("Send your spoiled fruits to our marchandise and get 5 percent from SDN for every 500g.");

        System.out.print("Please enter the total weight of your spoiled fruit? ");
        gram=input.nextInt();


        voucher= gram/500 ;


        System.out.println("Total 5 percent voucher you get is: " + voucher);


        System.out.println("Thank you for your contribution");

    }

}
```

Output :

```
Please enter the date of month below
Date: 5
Month: 12
Year: 2021
Date today: 5.12.2021
This system will check the price of fruit by entering the name or the fruit code
Please enter the fruit code or name: Kuci
Fruit price per kilogram: RM10
Proceed if you want to order(Y/N): Y
What do you want to order: Kuci
Total Kilogram you need (KG): 5
Total fruit price : RM50.0
Enter the percentage of the discount (If there is): 5
Total fruit price after discount : 47.5
Enter the delivery location: Kg belalang
Location distance: 4KM
Delivery fee Kg belalang: RM5
Total payment cost: RM52.5
Thank you for purchasing with us.
System to check the resistance of the fruits received
Enter the fruit name: Kuci
Enter the fruit code: 665665


Enter the fruit storage method(RTP): RTP
Fruit resistance at room temperature (day): 5
Fruit durability to date: 10.12.2021


Enter the fruit storage method(Refrigerator): Refrigerator
Fruit resistance in Refrigerator (day): 15
Fruit durability to date: 20.12.2021


Enter the fruit storage method(Freezer): Freezer
Fruit resistance at Freezer (day): 25
Fruit durability to date: 30.12.2021



Proceed if you want to claim 5 percent discount coupon for every purchase you made with us
Send your spoiled fruits to our marchandise and get 5 percent from SDN for every 500g.
Please enter the total weight of your spoiled fruit? 800
Total 5 percent voucher you get is: 1
Thank you for your contribution
```