



UUM
Universiti Utara Malaysia

ASSIGNMENT 1

STIA1113

**PROGRAMMING 1
GROUP B**

SEMESTER 1, 2022/2023 (A222)

PREPARED BY

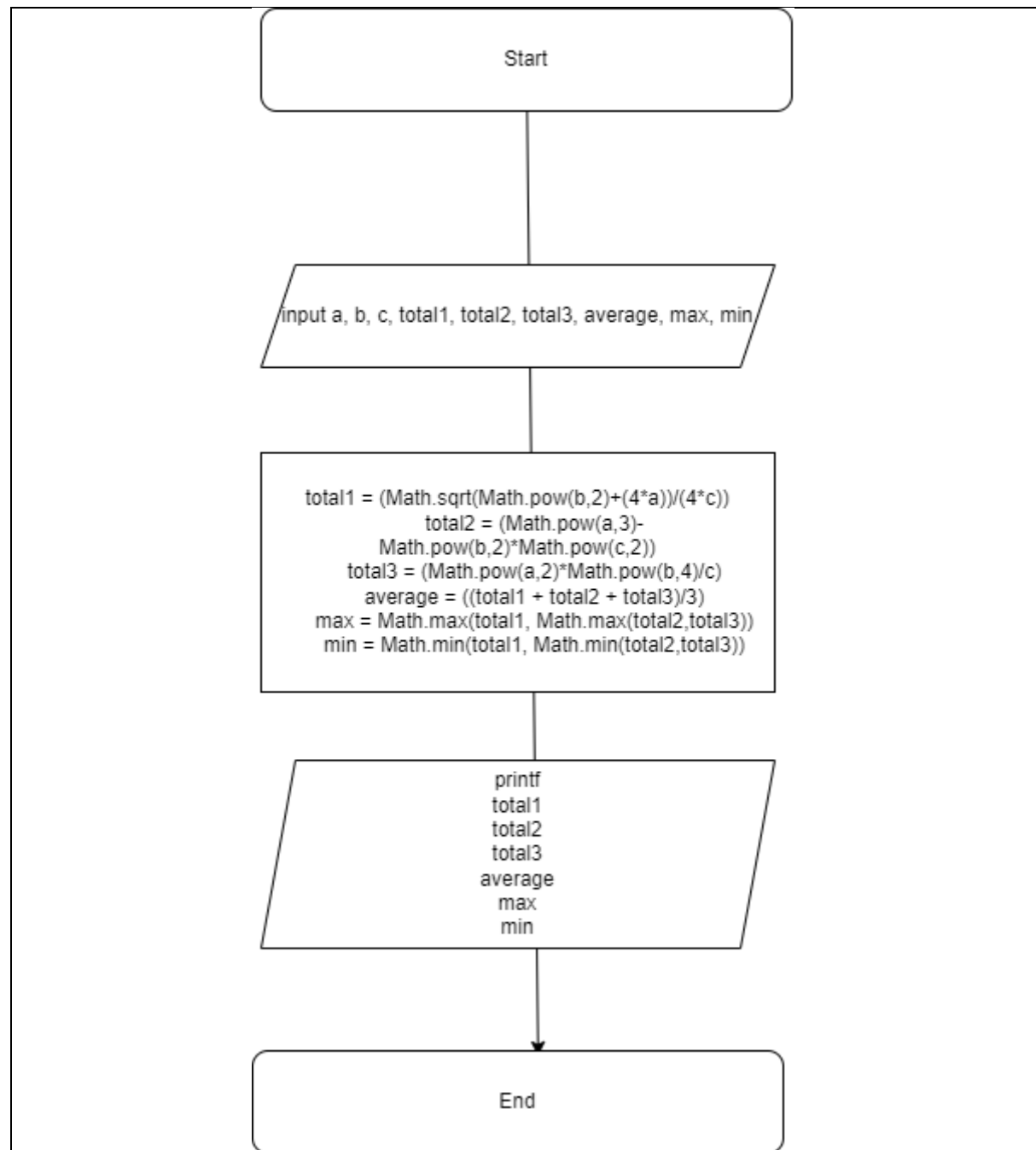
NAME	MATRIC NUMBER
SAW MING SHENG	296289

PREPARED FOR

DR. FATHEY MOHAMMED

1.QuestionI

Flowchart



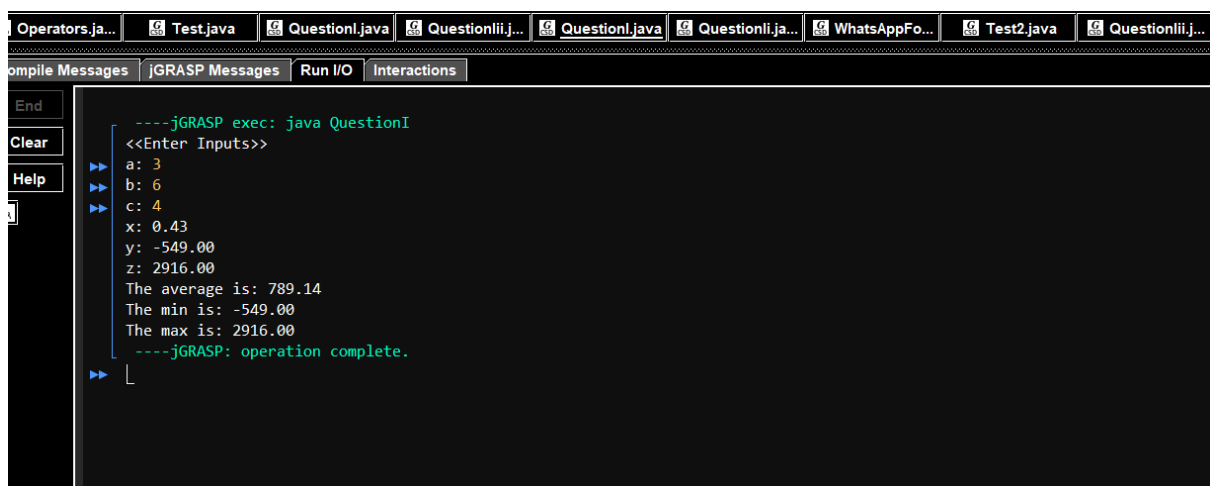
Code

```
/*-----  
-----  
----  
Name : <SAW MING SHENG>  
Matric Number: <296289>  
Subject : <PROGRAMMING 1>  
Group : <B>  
Assignment : <1>  
Program Description : <Calculate the value and determine the  
average, minimum, maximum of x, y, z>  
-----  
-----  
---*/  
import java.util.Scanner;// Import the Scanner class  
  
public class QuestionI {  
    public static void main(String[] args) {  
        Scanner read = new Scanner(System.in);  
        double a,b,c,total1,total2,total3,average,max,min;  
        System.out.println("<<Enter Inputs>>"); //Print txt  
        System.out.print("a: "); // Print txt  
        a = read.nextDouble(); // Read user input  
        System.out.print("b: "); // Print txt  
        b = read.nextDouble(); // Read user input  
        System.out.print("c: "); // Print txt  
        c =read.nextDouble(); // Read user input  
        total1 = (Math.sqrt(Math.pow(b,2)+(4*a))/(4*c)); //  
(Line 21-26)Create variable, name and assign value  
        total2 = (Math.pow(a,3)-Math.pow(b,2)*Math.pow(c,2));  
        total3 = (Math.pow(a,2)*Math.pow(b,4)/c);  
        average = ((total1 + total2 + total3)/3);  
        max = Math.max(total1, Math.max(total2,total3));  
        min = Math.min(total1, Math.min(total2,total3));  
        System.out.printf("x: %.2f%n", total1); // Print total1  
result  
        System.out.printf("y: %.2f%n", total2); // Print total2  
result  
        System.out.printf("z: %.2f%n", total3); // Print total3  
result  
        System.out.printf("The average is: %.2f%n", average);  
// Print average value  
        System.out.printf("The min is: %.2f%n", min); // Print  
max value  
        System.out.printf("The max is: %.2f", max); // Print  
min value  
  
    }  
}
```

Output

```
----jGRASP exec: java QuestionI
<<Enter Inputs>>
a: 3
b: 6
c: 4
x: 0.43
y: -549.00
z: 2916.00
The average is: 789.14
The min is: -549.00
The max is: 2916.00
----jGRASP: operation complete.
```

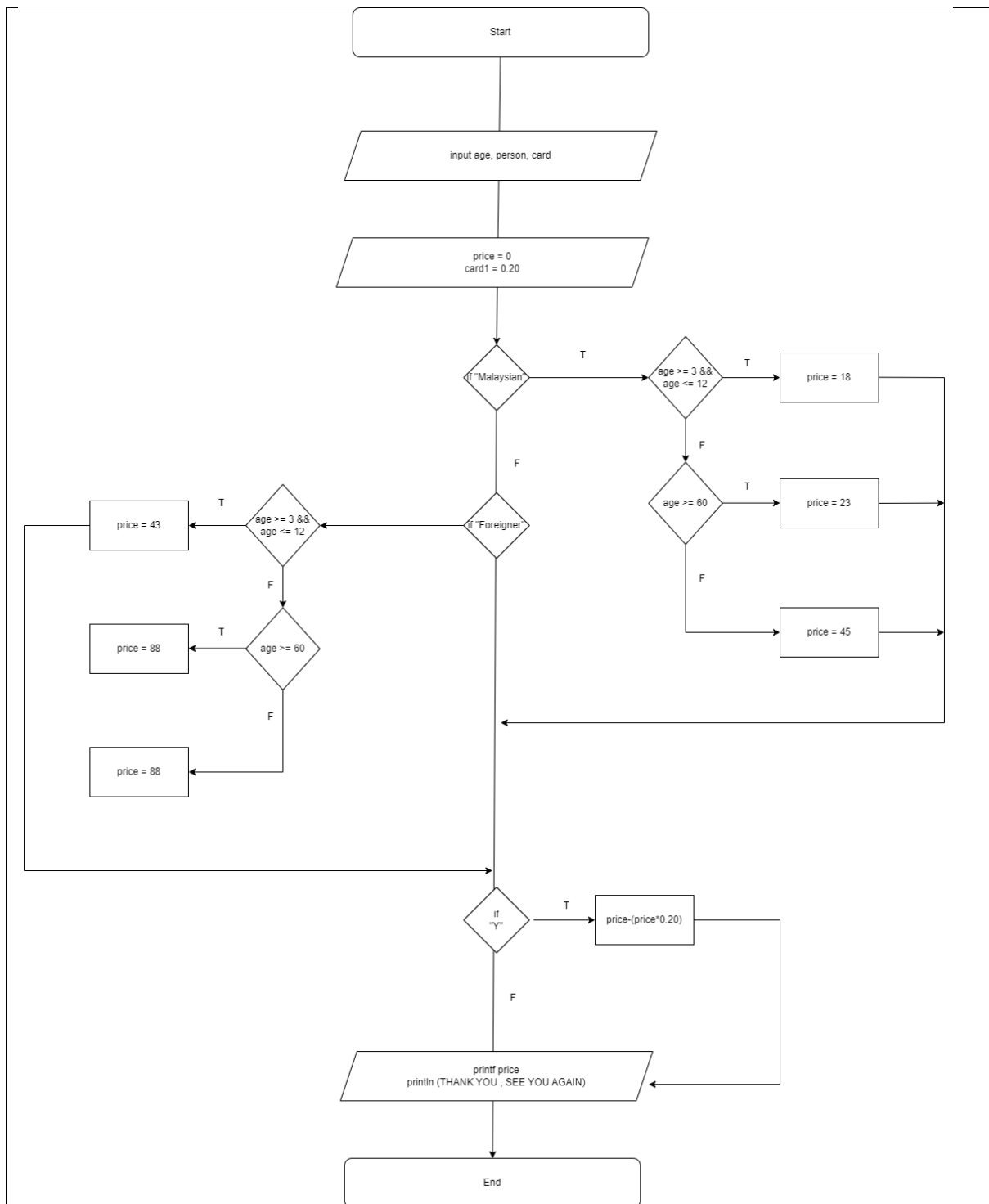
Prove



The screenshot shows the jGRASP IDE interface. At the top, there is a tab bar with several open files: Operators.java, Test.java, QuestionI.java, QuestionIii.j..., QuestionI.java, QuestionIi.ja..., WhatsAppFo..., Test2.java, and QuestionIii.j... Below the tab bar is a menu bar with 'Compile Messages', 'jGRASP Messages', 'Run I/O', and 'Interactions'. On the left side, there are buttons for 'End', 'Clear', and 'Help'. The main area is a black console window displaying the same output as the 'Output' section: '----jGRASP exec: java QuestionI', '<<Enter Inputs>>', 'a: 3', 'b: 6', 'c: 4', 'x: 0.43', 'y: -549.00', 'z: 2916.00', 'The average is: 789.14', 'The min is: -549.00', 'The max is: 2916.00', and '----jGRASP: operation complete.'. Blue arrows on the left of the console indicate the execution flow.

2. Questionli

Flowchart



Code

```
/*-----  
-----  
----  
Name : <SAW MING SHENG>  
Matric Number: <296289>  
Subject : <PROGRAMMING 1>  
Group : <B>  
Assignment : <1>  
Program Description : <Calculates the entrance fees that need  
to be paid by the visitors.>  
-----  
-----  
---*/  
import java.util.Scanner; // Import the Scanner class  
  
public class QuestionIi{  
    public static void main(String[] args) {  
        double age; // Create variable  
        double price = 0; // line 14-15 Create variable and  
assign value  
        double card1 = 0.20;  
        String person,card; // Create variable  
        System.out.println("***WELCOME TO PENANAG HILL***");//  
Print txt  
        Scanner read = new Scanner(System.in); // Create a  
Scanner object  
        System.out.print("Enter the age of visitor: "); //  
Print txt  
        age = read.nextDouble(); // Read user input  
        System.out.print("Malaysian / Foreigner: "); // Print  
txt  
        person = read.next(); // Read user input  
        System.out.print("Member card (Y/N): "); // Print txt  
        card =read.next(); // Read user input  
        if (person.equals("Malaysian")) { // Line 24-50 if else  
method  
            if (age >= 3 && age <= 12) { //When achieve the  
condition will print that result  
                price = 18;  
            } else if (age >= 60) {  
                price = 23;  
            } else {  
                price = 45;  
            }  
        }  
        if (person.equals("Foreigner")) {  
            if (age >= 3 && age <= 12) {  
                price = 43;  
            } else if (age >= 60) {
```

```
        price = 88;
    } else {
        price = 88;
    }
    if (card.equals("Y")) {
        price = ((price) -(price*0.20));
        System.out.printf("Member after discount:
RM%.2f%n" , price); // Print result
        System.out.println("THANK YOU, SEE YOU AGAIN"); //
Print txt
    } else {
        System.out.printf("Total amount: RM%.2f%n" ,
price); // Print result
        System.out.println("THANK YOU, SEE YOU AGAIN");
// Print txt
    }

    }
}
```

Output

```

    ----jGRASP exec: java QuestionIi
    ***WELCOME TO PENANAG HILL***
    >> Enter the age of visitor: 11
    >> Malaysian / Foreigner: Malaysian
    >> Member card (Y/N): Y
    Member after discount: RM14.40
    THANK YOU, SEE YOU AGAIN

    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIi
    ***WELCOME TO PENANAG HILL***
    >> Enter the age of visitor: 12
    >> Malaysian / Foreigner: Malaysian
    >> Member card (Y/N): N
    Total amount: RM18.00
    THANK YOU, SEE YOU AGAIN

    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIi
    ***WELCOME TO PENANAG HILL***
    >> Enter the age of visitor: 30
    >> Malaysian / Foreigner: Malaysian
    >> Member card (Y/N): Y
    Member after discount: RM36.00
    THANK YOU, SEE YOU AGAIN

    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIi
    ***WELCOME TO PENANAG HILL***
    >> Enter the age of visitor: 30
    >> Malaysian / Foreigner: Malaysian
    >> Member card (Y/N): N
    Total amount: RM45.00
    THANK YOU, SEE YOU AGAIN

    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIi
```



```
***WELCOME TO PENANAG HILL***
>> Enter the age of visitor: 61
>> Malaysian / Foreigner: Malaysian
>> Member card (Y/N): Y
Member after discount: RM18.40
THANK YOU, SEE YOU AGAIN

----jGRASP: operation complete.
```

```
----jGRASP exec: java QuestionIi
***WELCOME TO PENANAG HILL***
>> Enter the age of visitor: 61
>> Malaysian / Foreigner: Malaysian
>> Member card (Y/N): N
Total amount: RM23.00
THANK YOU, SEE YOU AGAIN

----jGRASP: operation complete.
```

```
----jGRASP exec: java QuestionIi
***WELCOME TO PENANAG HILL***
>> Enter the age of visitor: 10
>> Malaysian / Foreigner: Foreigner
>> Member card (Y/N): Y
Member after discount: RM34.40
THANK YOU, SEE YOU AGAIN

----jGRASP: operation complete.
```

```
----jGRASP exec: java QuestionIi
***WELCOME TO PENANAG HILL***
>> Enter the age of visitor: 10
>> Malaysian / Foreigner: Foreigner
>> Member card (Y/N): N
Total amount: RM43.00
THANK YOU, SEE YOU AGAIN

----jGRASP: operation complete.
```

```
----jGRASP exec: java QuestionIi
***WELCOME TO PENANAG HILL***
>> Enter the age of visitor: 32
>> Malaysian / Foreigner: Foreigner
>> Member card (Y/N): Y
```

```
Member after discount: RM70.40  
THANK YOU, SEE YOU AGAIN
```

```
----jGRASP: operation complete.
```

```
----jGRASP exec: java QuestionIi  
***WELCOME TO PENANAG HILL***  
▶▶ Enter the age of visitor: 33  
▶▶ Malaysian / Foreigner: Foreigner  
▶▶ Member card (Y/N): N  
Total amount: RM88.00  
THANK YOU, SEE YOU AGAIN
```

```
----jGRASP: operation complete.
```

```
----jGRASP exec: java QuestionIi  
***WELCOME TO PENANAG HILL***  
▶▶ Enter the age of visitor: 62  
▶▶ Malaysian / Foreigner: Foreigner  
▶▶ Member card (Y/N): Y  
Member after discount: RM70.40  
THANK YOU, SEE YOU AGAIN
```

```
----jGRASP: operation complete.
```

```
----jGRASP exec: java QuestionIi  
***WELCOME TO PENANAG HILL***  
▶▶ Enter the age of visitor: 63  
▶▶ Malaysian / Foreigner: Foreigner  
▶▶ Member card (Y/N): N  
Total amount: RM88.00  
THANK YOU, SEE YOU AGAIN
```

```
----jGRASP: operation complete.
```

```
▶▶
```

Prove

```
Compile Messages | JGRASP Messages | Run I/O | Interactions

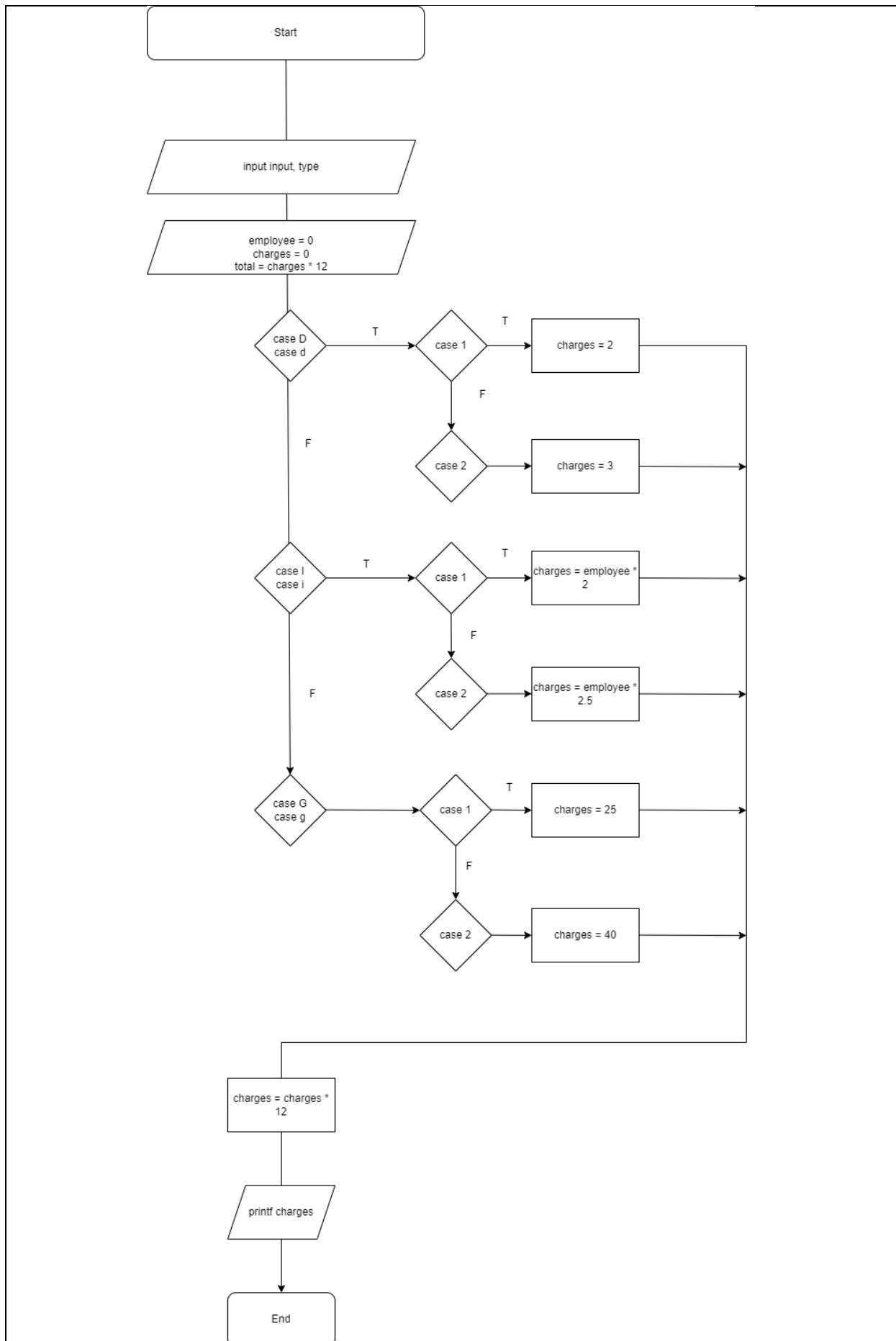
End
Clear
Help
A

----jGRASP exec: java QuestionIi
***WELCOME TO PENANAG HILL***
>> Enter the age of visitor: 40
>> Malaysian / Foreigner: Malaysian
>> Member card (Y/N): Y
    Member after discount: RM36.00
    THANK YOU, SEE YOU AGAIN
----jGRASP: operation complete.

----jGRASP exec: java QuestionIi
***WELCOME TO PENANAG HILL***
>> Enter the age of visitor: 10
>> Malaysian / Foreigner: Foreigner
>> Member card (Y/N): N
    Total amount: RM43.00
    THANK YOU, SEE YOU AGAIN
----jGRASP: operation complete.
>> [
```

3 Questionlii

Flowchart



Code

```
/*-----  
-----  
----  
Name : <SAW MING SHENG>  
Matric Number: <296289>  
Subject : <PROGRAMMING 1>  
Group : <B>  
Assignment : <1>  
Program Description : <Sewerage company would like to know  
how much the customers should be charged per year>  
-----  
-----  
---*/  
import java.util.Scanner; // Import the Scanner class  
  
public class QuestionIii {  
    public static void main(String[] args) {  
        Scanner read = new Scanner(System.in); // Create a  
Scanner object  
        char input; // line 14-15 Create variable  
        int type;  
        double employee = 0; // line 16-18 Create variable and  
assign value  
        double charges = 0;  
        double total = charges * 12;  
        System.out.print("Enter the code for customer category  
[D: Domestic/ I: Industrial/ G: Government]: "); // Print txt  
        input = read.next().charAt(0); // Read user input  
        switch (input) { // Line 21-62 using switch method  
            case 'D':  
            case 'd':  
                System.out.print("For the Domestic:\n1- Houses in  
colony/ 2- Houses in village\nPlease enter the code[1/2]: ");  
                // Print txt  
                type = read.nextInt(); // Read user input  
                switch (type) {  
                    case 1:  
                        charges = 2;  
                        break;  
                    case 2:  
                        charges = 3;  
                        break;  
                }  
                break;  
            case 'I':  
            case 'i':  
                System.out.print("For the Industrial:\n1- Companies  
with individual septic tank/ 2- Companies with connected  
sewerage services\nPlease enter the code[1/2]: "); // Print
```

```

txt
    type = read.nextInt(); // Read user input
    switch (type) {
        case 1:
            System.out.print("Enter the number of employees:
"); // Print txt
            employee = read.nextInt(); //Read user input
            charges = employee * 2;
            break;
        case 2:
            System.out.print("Enter the number of employees:
"); // Print txt
            employee = read.nextInt(); // Read user input
            charges = employee * 2.5;
            break;
    }
    break;
    case 'G':
    case 'g':
        System.out.print("For the Government:\n1-
Organization with individual septic tank/ 2- Organization
with connected sewerage services\nPlease enter the code[1/2]:
"); // Print txt
        type = read.nextInt(); // Read input user
        switch (type) {
            case 1:
                charges = 25;
                break;
            case 2:
                charges = 40;
                break;
        }
    }
    charges = charges * 12;
    System.out.printf("The yearly charge is: %.2f",
charges); // Print result
}
}

```

Output

```
    ----jGRASP exec: java QuestionIii
>> Enter the code for customer category [D: Domestic/ I:
Industrial/ G: Government]: D
    For the Domestic:
    1- Houses in colony/ 2- Houses in village
>> Please enter the code[1/2]: 1
    The yearly charge is: 24.00
    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIii
>> Enter the code for customer category [D: Domestic/ I:
Industrial/ G: Government]: D
    For the Domestic:
    1- Houses in colony/ 2- Houses in village
>> Please enter the code[1/2]: 2
    The yearly charge is: 36.00
    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIii
>> Enter the code for customer category [D: Domestic/ I:
Industrial/ G: Government]: I
    For the Industrial:
    1- Companies with individual septic tank/ 2- Companies
with connected sewerage services
>> Please enter the code[1/2]: 1
>> Enter the number of employees: 10
    The yearly charge is: 240.00
    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIii
>> Enter the code for customer category [D: Domestic/ I:
Industrial/ G: Government]: I
    For the Industrial:
    1- Companies with individual septic tank/ 2- Companies
with connected sewerage services
>> Please enter the code[1/2]: 2
>> Enter the number of employees: 12
    The yearly charge is: 360.00
    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIii
>> Enter the code for customer category [D: Domestic/ I:
```



```

Industrial/ G: Government]: G
    For the Government:
    1- Organization with individual septic tank/ 2-
Organization with connected sewerage services
▶▶ Please enter the code[1/2]: 1
    The yearly charge is: 300.00
    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIii
▶▶ Enter the code for customer category [D: Domestic/ I:
Industrial/ G: Government]: G
    For the Government:
    1- Organization with individual septic tank/ 2-
Organization with connected sewerage services
▶▶ Please enter the code[1/2]: 2
    The yearly charge is: 480.00
    ----jGRASP: operation complete.
▶▶

```

Prove

```

Compile Messages | jGRASP Messages | Run/IO | Interactions
End
Clear
Help
▶▶ ----jGRASP exec: java QuestionIii
▶▶ Enter the code for customer category [D: Domestic/ I: Industrial/ G: Government]: I
    For the Industrial:
    1- Companies with individual septic tank/ 2- Companies with connected sewerage services
▶▶ Please enter the code[1/2]: 1
▶▶ Enter the number of employees: 10
    The yearly charge is: 240.00
    ----jGRASP: operation complete.

    ----jGRASP exec: java QuestionIii
▶▶ Enter the code for customer category [D: Domestic/ I: Industrial/ G: Government]: G
    For the Government:
    1- Organization with individual septic tank/ 2- Organization with connected sewerage services
▶▶ Please enter the code[1/2]: 2
    The yearly charge is: 480.00
    ----jGRASP: operation complete.
▶▶

```