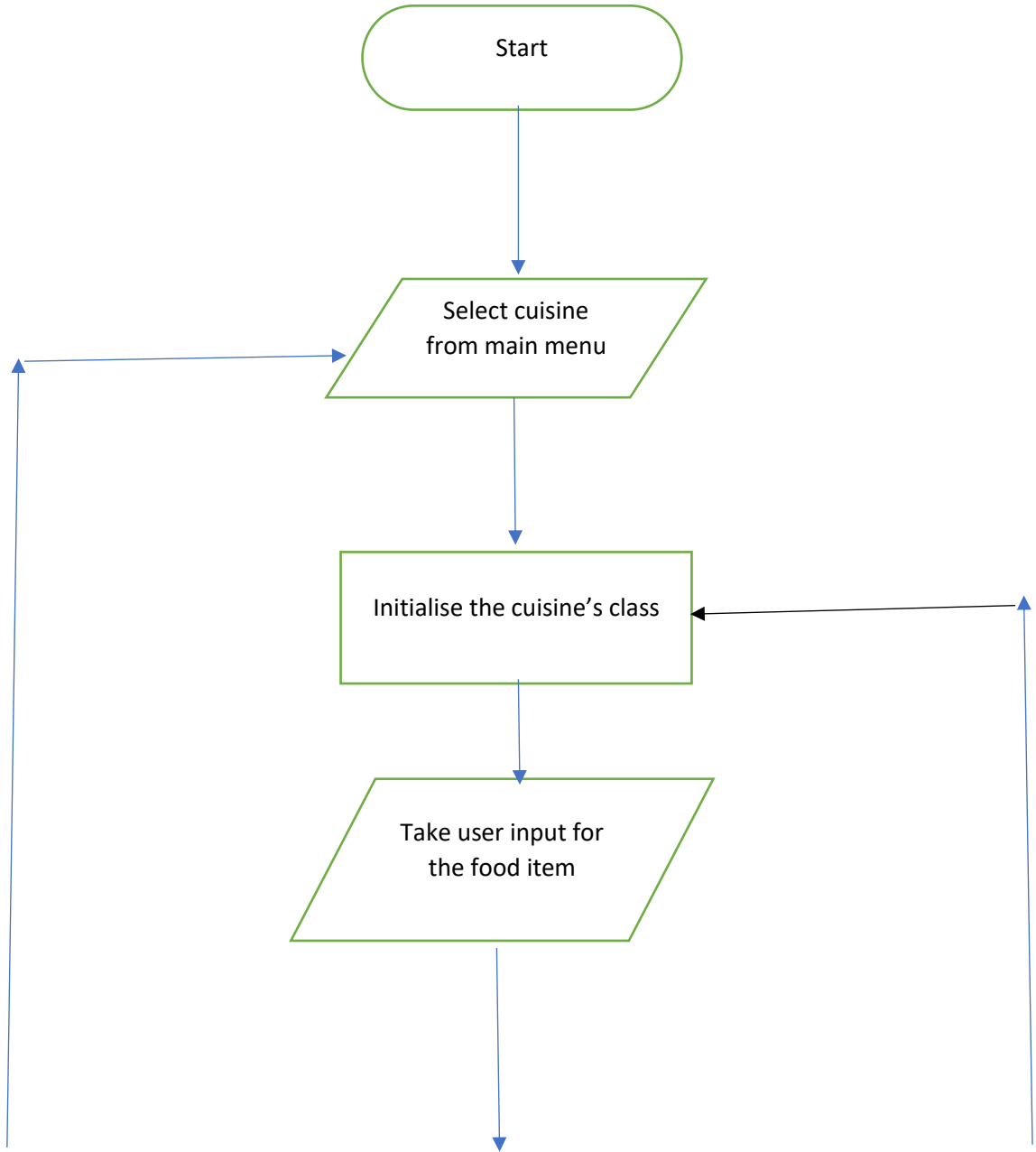
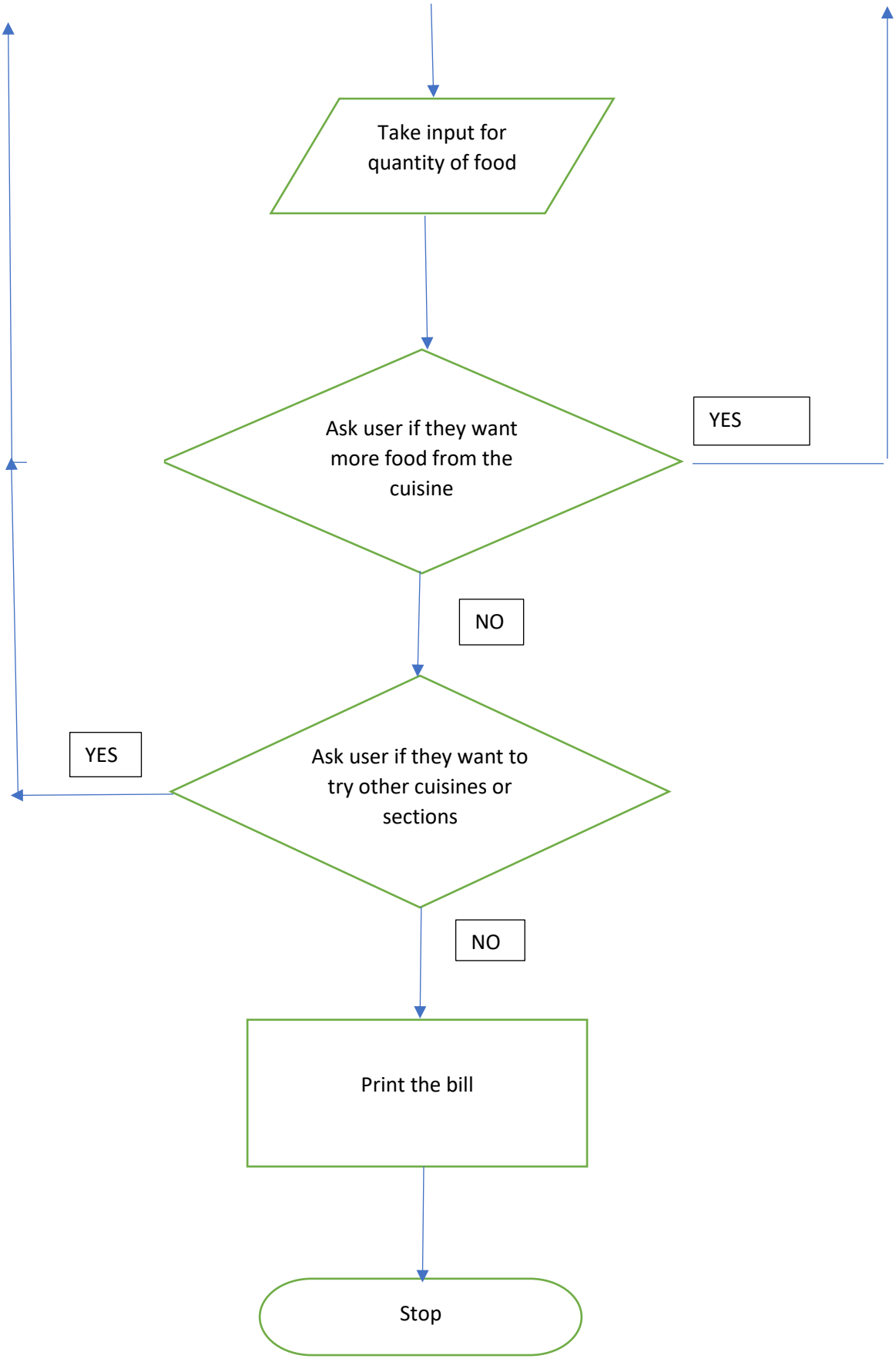
Restaurant Billing System

Approach Note:
1.Inheritance was used to share properties like quantity,choice and List of items selected among all the sub classes.
2.Hashmap was used to store the names of the items and their respective quantity.
3.A switch case controlled by user input is used for various menus in the program.
4.Each switch case is enclosed in a while loop so user can select items as many times as they want.
5.Different classes were created for different cuisines with their own individual menu.
6.When the user selects a particular cuisine that cuisine's class is initialised so the user can select the food they desire.

Flow Chart:





Algorithm:
Start
1.In Main class create a while loop which exits when the user inputs N (No).
2.Create a switch case in the while loop and when the user selects a particular cuisine initialise the cuisine's class.

3.Create a class for each cuisine with attributes like total to store the cost for the quantity of food the user orders and in the constructor create a while loop which exits on the user input N (No).
4.In the while loop in the constructor of each of the cuisine class create a switch case to select different food and take inputs for quantity for the food the user selects.
5.For the selected food and quantity store the price in the variable total.
6.A hash map is used to store the name of the food selected and the quantity for printing in the bill at the end.
7.In each class a getTotal() method is created to get the total price of food selected by the user.This helps to get the grand total by adding the total from each cuisine class.
8.When the user enters N when they choose not to get more food of the current cuisine they will be prompted to choose if they want to try other sections of the menu.
9.If the user selects N the bill will be printed along with the different food ordered the quantity , the service tax ,GST and total amount to be paid.
10. The service tax is 10% of the Total amount and GST is 15% of total amount and the final total is total amount + service tax + GST.
Stop

Code:

```
package menu;

import java.util.Map;
import java.util.Scanner;
import java.time.*;

public class Main {

	public static void main(String[] args) {
		LocalDate date = LocalDate.now();
		LocalTime time = LocalTime.now();
		int totalBill = 0;
		int selection;
		Scanner scanner = new Scanner(System.in);
		int infi = 1;
		while (infi != 0) {
			System.out.println("Enter your choice");
			System.out.println("1.Starters");
			System.out.println("2.Chinese");
			System.out.println("3.Indian");
			System.out.println("4.Desserts");
			selection = scanner.nextInt();
			switch (selection) {
			case 1:
```

```
                        Starters starters = new Starters();
                        totalBill += starters.putTotal();
                        break;
                case 2:
                        ChineseCuisine chineseCuisine = new
ChineseCuisine();
                        totalBill += chineseCuisine.putTotal();
                        break;
                case 3:
                        IndianCuisine indianCuisine = new IndianCuisine();
                        totalBill+= indianCuisine.putTotal();
                        break;
                case 4:
                        Dessert dessert = new Dessert();
                        totalBill += dessert.putTotal();
                default:
                        System.out.println("Wrong Choice");
                        break;
                }
                System.out.println("Do you want to order from other
Cuisines?(Y/N)");
                String x = scanner.next();
                if (x.equals("N")) {
            infi = 0;
                }
            }
            // Printing menu
            System.out.println("\n");
            System.out.println("\n");
            System.out.println("-------------Bill-------------");
            LocalDate date1 = LocalDate.now();
            LocalTime time1 = LocalTime.now();
            System.out.println("Date: "+date1+" "+"Time: "+time1);
            System.out.println("Your Orders: ");
            System.out.println("Item Name  :      Quantity");
            for (Map.Entry mapElement : Cuisine.menu.entrySet()) {
                    String key = (String) mapElement.getKey();
                    int value = ((int) mapElement.getValue());
                    System.out.println(key + " : " + value);
            }
            float tax = 0;
            float service_tax = (float) (0.1*totalBill);
            tax = (float) ((0.15)*totalBill);
            System.out.println("Total amount: "+totalBill+" INR");
            System.out.println("Service Tax 10% :"+service_tax+" INR");
            System.out.println("15% GST: "+tax+" INR");
```

```
                System.out.println("Total amount + tax:
"+(service_tax+tax+totalBill)+" INR");

        }

}


package menu;
import java.util.HashMap;
public class Cuisine {
    int choice;
    int quantity;
    static HashMap<String,Integer> menu = new HashMap<String,Integer>();
}



//Starters
package menu;

import java.util.Scanner;

public class Starters extends Cuisine {
        int total;
        int ch;

        Starters() {
                boolean inf = true;
                Scanner scan = new Scanner(System.in);
                while (inf) {
                        System.out.println("Enter your choice: ");
                        System.out.println("1. Spring Roll         160/-");
                        System.out.println("2. Paneer Chilli       170/-");
                        System.out.println("3. Chicken Tikka       180/-");
                        System.out.println("4. Baby Corn Chilli    150/-");
                        System.out.println("5. Chilli Chicken      180/-");
                        System.out.println("6. Tomato Soup         100/-");
                        System.out.println("7. Sweet Corn Soup     130/-");
                        System.out.println("8. Chicken Soup        150/-");
                        choice = scan.nextInt();
                        switch (choice) {
                        case 1:

                                System.out.println("Enter the quantity: ");
                                quantity = scan.nextInt();
                                total = total + (quantity * 160);
```

```
                menu.put("Spring Roll", quantity);
                break;
            case 2:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 170);
                menu.put("Paneer Chilli", quantity);
                break;
            case 3:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 180);
menu.put("Chicken Tikka", quantity);
                break;
            case 4:
                System.out.println("Enter the quantity");
                quantity = scan.nextInt();
                total = total + (quantity * 150);
                menu.put("Baby Corn Chilli", quantity);
                break;
            case 5:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 180);
menu.put("Chilli Chicken", quantity);
                break;
            case 6:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 100);
                menu.put("Tomato Soup", quantity);
                break;
            case 7:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 130);
                menu.put("Sweet Corn Soup", quantity);
                break;
            case 8:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 150);
                menu.put("Chicken Soup", quantity);
                break;

            default:
```

```
                        System.out.println("Wrong Choice");
                        break;
                }
                System.out.println("Want to order more Starters?(Y/N) ");
                String x = scan.next();
                if (x.equals("N")) {
                        inf = false;
                }
        }
    }
    int putTotal() {
        return total;
    }

}
```

```
//Chinese

package menu;

import java.util.Scanner;

public class ChineseCuisine extends Cuisine {
    int total;
    int ch;

    ChineseCuisine() {
        boolean inf = true;
        Scanner scan = new Scanner(System.in);
        while (inf) {
            System.out.println("Enter your choice: ");
            System.out.println("1. Veg. Chowmein");
            System.out.println("2. Veg. Hakka Noodles");
            System.out.println("3. Veg. Paneer Chowmein");
            System.out.println("4. Egg Chowmein");
            System.out.println("5. Chicken Chowmein");
            System.out.println("6. Mushroom Noodles");
            System.out.println("7. Veg. Fried Rice");
            System.out.println("8. Egg Fried Rice");
            System.out.println("9. Chicken Fried Rice");
            choice = scan.nextInt();
            switch (choice) {
            case 1:
```

```
                        System.out.println("Enter your choice
1.Half:150/-  2.Full:180/-");
                        ch = scan.nextInt();
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        switch (ch) {
                        case 1:
                                total = total + (quantity * 150);
                                break;
                        case 2:
                                total = total + (quantity * 180);
                                break;
                        default:
                                System.out.println("Wrong choice");
                                break;
                        }
                        menu.put("Veg.Chowmein", quantity);
                        break;
                case 2:

                        System.out.println("Enter your choice
1.Half:60/-  2.Full:100/-");
                        ch = scan.nextInt();
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        switch (ch) {
                        case 1:
                                total = total + (quantity * 60);
                                break;
                        case 2:
                                total = total + (quantity * 100);
                                break;
                        default:
                                System.out.println("Wrong choice");
                                break;
                        }
                        menu.put("Veg. Hakka Noodles", quantity);
                        break;
                case 3:

                        System.out.println("Enter your choice
1.Half:170/-  2.Full:220/-");
                        ch = scan.nextInt();
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
```

```
                        switch (ch) {
                        case 1:
                                total = total + (quantity * 170);
                                break;
                        case 2:
                                total = total + (quantity * 220);
                                break;
                        default:
                                System.out.println("Wrong choice");
                                break;
                        }
                        menu.put("Veg.Paneer Chowmein", quantity);
                        break;
                case 4:

                        System.out.println("Enter your choice
1.Half:170/-  2.Full:220/-");
                        ch = scan.nextInt();
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        switch (ch) {
                        case 1:
                                total = total + (quantity * 170);
                                break;
                        case 2:
                                total = total + (quantity * 220);
                                break;
                        default:
                                System.out.println("Wrong choice");
                                break;
                        }
                        menu.put("Egg Chowmein", quantity);
                        break;
                case 5:

                        System.out.println("Enter your choice
1.Half:200/-  2.Full:220/-");
                        ch = scan.nextInt();
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        switch (ch) {
                        case 1:
                                total = total + (quantity * 200);
                                break;
                        case 2:
                                total = total + (quantity * 220);
```

```
                        break;
                    default:
                        System.out.println("Wrong choice");
                        break;
                    }
                    menu.put("Chicken Chowmein", quantity);
                    break;
                case 6:

                    System.out.println("Enter your choice
1.Half:80/-  2.Full:150/-");
                    ch = scan.nextInt();
                    System.out.println("Enter the quantity: ");
                    quantity = scan.nextInt();
                    switch (ch) {
                    case 1:
                        total = total + (quantity * 80);
                        break;
                    case 2:
                        total = total + (quantity * 150);
                        break;
                    default:
                        System.out.println("Wrong choice");
                        break;
                    }
                    menu.put("Mushroom Noodles", quantity);
                    break;
                case 7:

                    System.out.println("Enter your choice
1.Half:100/-  2.Full:150/-");
                    ch = scan.nextInt();
                    System.out.println("Enter the quantity: ");
                    quantity = scan.nextInt();
                    switch (ch) {
                    case 1:
                        total = total + (quantity * 100);
                        break;
                    case 2:
                        total = total + (quantity * 150);
                        break;
                    default:
                        System.out.println("Wrong choice");
                        break;
                    }
                    menu.put("Veg. Fried Rice", quantity);
```

```
                        break;
                case 8:

                        System.out.println("Enter your choice
1.Half:120/-  2.Full:160/-");
                        ch = scan.nextInt();
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        switch (ch) {
                        case 1:
                                total = total + (quantity * 120);
                                break;
                        case 2:
                                total = total + (quantity * 160);
                                break;
                        default:
                                System.out.println("Wrong choice");
                                break;
                        }
                        menu.put("Egg Fried Rice", quantity);
                        break;
                case 9:

                        System.out.println("Enter your choice
1.Half:150/-  2.Full:200/-");
                        ch = scan.nextInt();
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        switch (ch) {
                        case 1:
                                total = total + (quantity * 150);
                                break;
                        case 2:
                                total = total + (quantity * 200);
                                break;
                        default:
                                System.out.println("Wrong choice");
                                break;
                        }
                        menu.put("Chicken Fried Rice", quantity);
                        break;

                default:
                        System.out.println("Wrong Choice");
                        break;
                }
```

```
                        System.out.println("Want to order more Chinese
Food?(Y/N)");
                        String x = scan.next();
                        if (x.equals("N")) {
                inf = false;
                        }
                    }
        }

        int putTotal() {
                return total;
        }

}



//Indian

package menu;

import java.util.Scanner;

public class IndianCuisine extends Cuisine{
        int total;
        int ch;
        IndianCuisine(){
                boolean inf = true;
                Scanner scan = new Scanner(System.in);
                while (inf) {
                        System.out.println("Enter your choice: ");
                        System.out.println("1. Mix Veg. Biriyani        250/-");
                        System.out.println("2. Chicken Tikka Biriyani   300/-");
                        System.out.println("3. Fry Chicken Biriyani     300/-");
                        System.out.println("4. Fish Biriyani            280/-");
                        System.out.println("5. Chicken Dum Biriyani     320/-");
                        System.out.println("6. Veg. Thali               200/-");
                        System.out.println("7. Paneer Biriyani          250/-");
                        System.out.println("8. Plain Naan               14/-");
                        System.out.println("9. Butter Naan              20/-");
                        System.out.println("10.Chicken Curry            200/-");
                        System.out.println("11.Panner Butter Masala     200/-");
                        choice = scan.nextInt();
                        switch (choice) {
                        case 1:
```

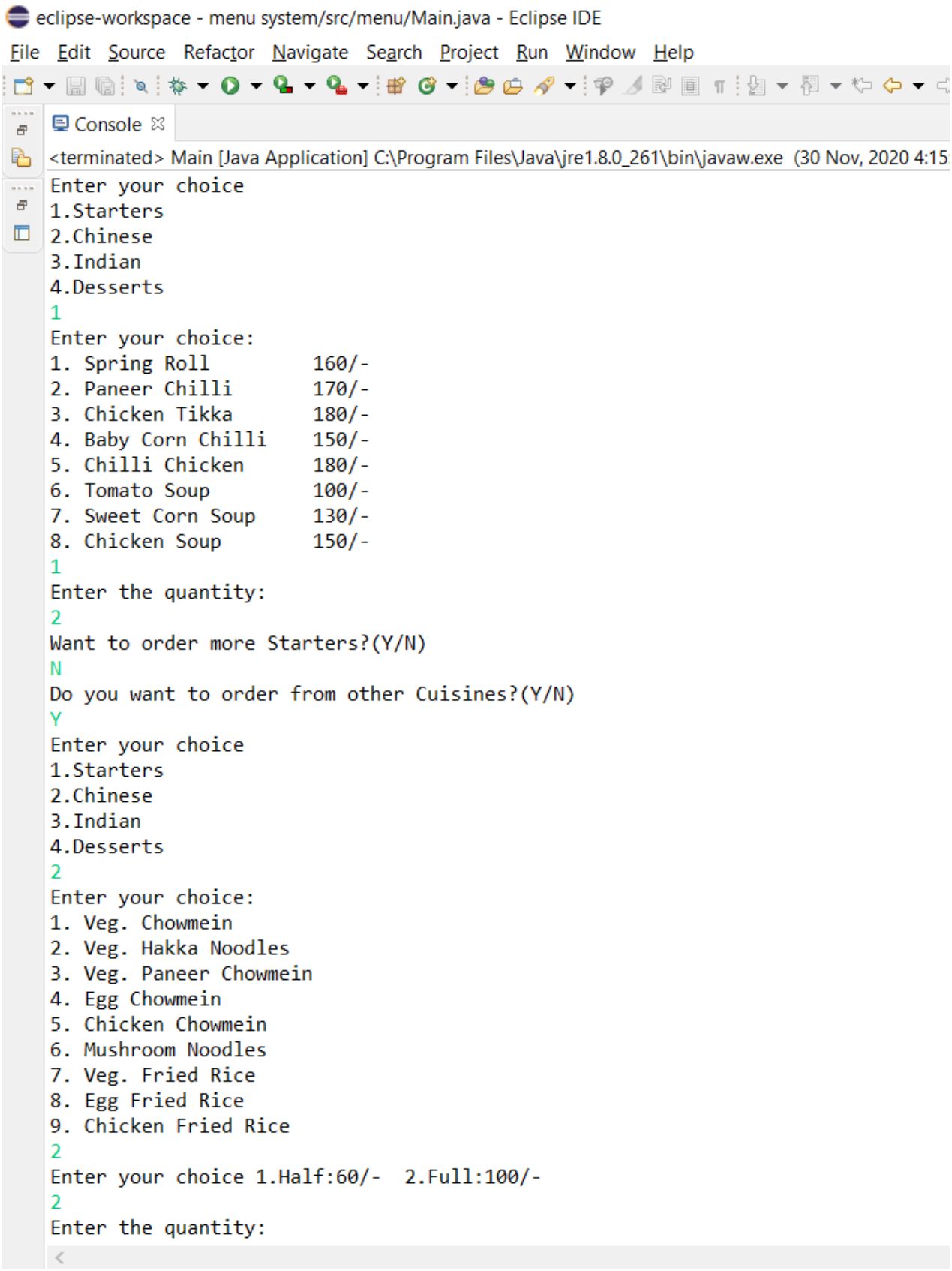
```
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 250);
                menu.put("Mix Veg. Biriyani", quantity);
                break;
            case 2:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 300);
                menu.put("Chicken Tikka Biriyani", quantity);
                break;
            case 3:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 300);
menu.put("Fry Chicken Biriyani", quantity);
                break;
            case 4:
                System.out.println("Enter the quantity");
                quantity = scan.nextInt();
                total = total + (quantity * 280);
                menu.put("Fish Biriyani", quantity);
                break;
            case 5:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 320);
menu.put("Chicken Dum Biriyani", quantity);
                break;
            case 6:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 200);
menu.put("Veg. Thali", quantity);
                break;
            case 7:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 250);
menu.put("Paneer Biriyani", quantity);
                break;
            case 8:
                System.out.println("Enter the quantity: ");
                quantity = scan.nextInt();
                total = total + (quantity * 14);
menu.put("Plain Naan", quantity);
```

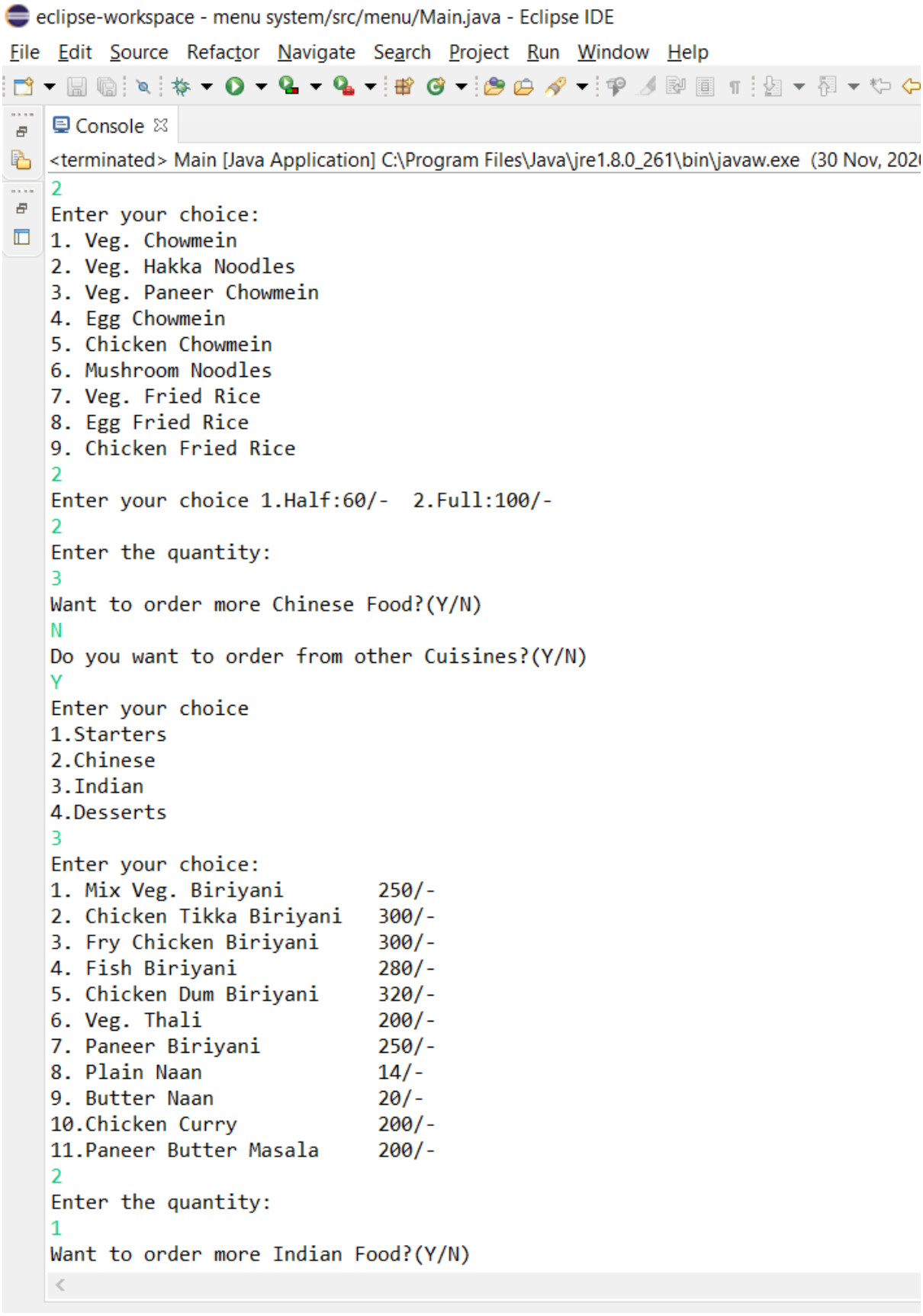
```
                        break;
                    case 9:
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        total = total + (quantity * 20);
            menu.put("Butter  Naan", quantity);
                        break;
                    case 10:
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        total = total + (quantity * 200);
            menu.put("Chicken Curry", quantity);
                        break;
                    case 11:
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        total = total + (quantity * 200);
            menu.put("Panner Butter Masala", quantity);
                        break;
                    default:
                        System.out.println("Wrong Choice");
                        break;
                    }
                    System.out.println("Want to order more Indian Food?(Y/N)
");
                    String x = scan.next();
                    if (x.equals("N")) {
                        inf = false;
                    }
                }
        }
        int putTotal() {
                return total;
        }

}

//Dessert

package menu;

import java.util.Scanner;

public class Dessert extends Cuisine{
        int total;
        int ch;
    Dessert(){
```

```
    boolean inf = true;
    Scanner scan = new Scanner(System.in);
    while (inf) {
            System.out.println("Enter your choice: ");
            System.out.println("1. Dark Chocolate Sandwich     150/-");
            System.out.println("2. Chocolate Milkshake         170/-");
            System.out.println("3. Strawberry Milkshake        180/-");
            System.out.println("4. Chocolate Mousse            150/-");
            System.out.println("5. Mango Crush                 180/-");
            System.out.println("6. Sweet Lassi                 100/-");
            System.out.println("7. Gulab Jamun                  10/-");
            System.out.println("8. Kulfi                       30/-");
            choice = scan.nextInt();
            switch (choice) {

            case 1:

                    System.out.println("Enter the quantity: ");
                    quantity = scan.nextInt();
                    total = total + (quantity * 150);
                    menu.put("Dark Chocolate Sandwich", quantity);
                    break;
            case 2:
                    System.out.println("Enter the quantity: ");
                    quantity = scan.nextInt();
                    total = total + (quantity * 170);
                    menu.put("Chocolate Milkshake", quantity);
                    break;
            case 3:
                    System.out.println("Enter the quantity: ");
                    quantity = scan.nextInt();
                    total = total + (quantity * 180);
menu.put("Strawberry Milkshake", quantity);
                    break;
            case 4:
                    System.out.println("Enter the quantity");
                    quantity = scan.nextInt();
                    total = total + (quantity * 150);
                    menu.put("Chocolate Mousse", quantity);
                    break;
            case 5:
                    System.out.println("Enter the quantity: ");
                    quantity = scan.nextInt();
                    total = total + (quantity * 180);
menu.put("Mango Crush", quantity);
                    break;
```

```
                case 6:
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        total = total + (quantity * 100);
        menu.put("Sweet Lassi", quantity);
                        break;
                case 7:
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        total = total + (quantity * 100);
        menu.put("Gulab Jamun", quantity);
                        break;
                case 8:
                        System.out.println("Enter the quantity: ");
                        quantity = scan.nextInt();
                        total = total + (quantity * 30);
        menu.put("Kulfi", quantity);
                        break;
                default:
                        System.out.println("Wrong Choice");
                        break;
                }
                System.out.println("Want to order more Dessserts?(Y/N) ");
                String x = scan.next();
                if (x.equals("N")) {
                        inf = false;
                }
            }
    }
    int putTotal(){
         return total;
    }
}
```

Sample Input and Output:


eclipse-workspace - menu system/src/menu/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Console
<terminated> Main [Java Application] C:\Program Files\Java\jre1.8.0_261\bin\javaw.exe (30 Nov, 2020 4:15
Enter your choice
1.Starters
2.Chinese
3.Indian
4.Desserts
1
Enter your choice:
1. Spring Roll 160/-
2. Paneer Chilli 170/-
3. Chicken Tikka 180/-
4. Baby Corn Chilli 150/-
5. Chilli Chicken 180/-
6. Tomato Soup 100/-
7. Sweet Corn Soup 130/-
8. Chicken Soup 150/-
1
Enter the quantity:
2
Want to order more Starters?(Y/N)
N
Do you want to order from other Cuisines?(Y/N)
Y
Enter your choice
1.Starters
2.Chinese
3.Indian
4.Desserts
2
Enter your choice:
1. Veg. Chowmein
2. Veg. Hakka Noodles
3. Veg. Paneer Chowmein
4. Egg Chowmein
5. Chicken Chowmein
6. Mushroom Noodles
7. Veg. Fried Rice
8. Egg Fried Rice
9. Chicken Fried Rice
2
Enter your choice 1.Half:60/- 2.Full:100/-
2
Enter the quantity:


eclipse-workspace - menu system/src/menu/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Console
<terminated> Main [Java Application] C:\Program Files\Java\jre1.8.0_261\bin\javaw.exe (30 Nov, 202
2
Enter your choice:
1. Veg. Chowmein
2. Veg. Hakka Noodles
3. Veg. Paneer Chowmein
4. Egg Chowmein
5. Chicken Chowmein
6. Mushroom Noodles
7. Veg. Fried Rice
8. Egg Fried Rice
9. Chicken Fried Rice
2
Enter your choice 1.Half:60/- 2.Full:100/-
2
Enter the quantity:
3
Want to order more Chinese Food?(Y/N)
N
Do you want to order from other Cuisines?(Y/N)
Y
Enter your choice
1.Starters
2.Chinese
3.Indian
4.Desserts
3
Enter your choice:
1. Mix Veg. Biriyani 250/-
2. Chicken Tikka Biriyani 300/-
3. Fry Chicken Biriyani 300/-
4. Fish Biriyani 280/-
5. Chicken Dum Biriyani 320/-
6. Veg. Thali 200/-
7. Paneer Biriyani 250/-
8. Plain Naan 14/-
9. Butter Naan 20/-
10.Chicken Curry 200/-
11.Paneer Butter Masala 200/-
2
Enter the quantity:
1
Want to order more Indian Food?(Y/N)


eclipse-workspace - menu system/src/menu/Main.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Console
<terminated> Main [Java Application] C:\Program Files\Java\jre1.8.0_261\bin\javaw.e
11.Paneer Butter Masala 200/-
2
Enter the quantity:
1
Want to order more Indian Food?(Y/N)
Y
Enter your choice:
1. Mix Veg. Biriyani 250/-
2. Chicken Tikka Biriyani 300/-
3. Fry Chicken Biriyani 300/-
4. Fish Biriyani 280/-
5. Chicken Dum Biriyani 320/-
6. Veg. Thali 200/-
7. Paneer Biriyani 250/-
8. Plain Naan 14/-
9. Butter Naan 20/-
10.Chicken Curry 200/-
11.Paneer Butter Masala 200/-
11
Enter the quantity:
1
Want to order more Indian Food?(Y/N)
N
Do you want to order from other Cuisines?(Y/N)
N
----------Bill----------
Date: 2020-11-30 Time: 16:16:20.465
Your Orders:
Item Name : Quantity
Chicken Tikka Biriyani : 1
Spring Roll : 2
Veg. Hakka Noodles : 3
Panner Butter Masala : 1
Total amount: 1120 INR
Service Tax 10% :112.0 INR
15% GST: 168.0 INR
Total amount + tax: 1400.0 INR