
CIS1403 FINAL GROUP PROJECT REPORT

Term: 202220

Team #_Application Name (e.g. T1_Car Rental)

Student Names and IDs:

Student 1, ID

Student 2, ID

Student 3, ID

Academic Honesty Statement

In accordance with HCT policy LP201- Academic Honesty

- **Students are required to refrain from all forms of academic dishonesty as defined and explained in HCT procedures and directions from HCT personnel.**
- **A student found guilty of having committed acts of academic dishonesty may be subject to one or more of the disciplinary measures as outlined in Article 33 of the Student and Academic Regulations**

Student Name and ID: _____

date: _____

Table of Contents

Introduction.....2

User Requirements.....	2
Input/Output.....	2
Methods/Functions.....	2
Screenshots of Application Running with Test Data	3
Source code.....	3
Assigned Tasks	8
References Page.....	9

Introduction

This is a console-based project developed in Java that allows users to purchase multiple books. The program offers various discounts and calculates VAT on the final amount. The user can add multiple books to the cart and remove them if necessary. The program displays the total amount along with the VAT, and the user can choose to apply any available discounts.

User Requirements

Our application allows the user to do the following:

- Select books from the given lists of books
- Add a new book
- Remove a book
- Apply discount rates
- Apply VAT charges
- Bill calculations
- Total bill details

Input/Output

Define a clear description of the Inputs and Outputs to the system together with the developed system and its functionality as part of the program documentation

Example:

Input	Process	Output
Select books from the given lists of books		Display list for books
Select any option	Selected option will be displayed	Display price
Select more books		Display total books
Delete option	Delete any selected book	Display total
Etc.		

Methods/Functions

Describe all the methods/functions that you created in terms of what they perform, passed data type and returned values and how these methods relate to each other.

Example:

Name of function	What does it perform	Passed data (parameters)	Return value
displayMenu()	Display list of books	Menu data	All books
applyDiscount()	calculates and returns the discount amount	The total amount	The discount amount
ApplyVAT()	calculates and returns the discount amount	The total amount	The vat amount

computeBill()	Calculate the bill	All data	Total bill
addNewItem()	Add a new book	Book	Book added
removeItem()	Delete a book	book	Book deleted

Screenshots of Application Running with Test Data

Paste screenshots of sample runs of your application here. Point out the test data used and displayed results.

Example:

Screenshot	Explanation
<pre>Menu: 1. Math - AED 120.0 2. Arabic - AED 90.0 3. Geography - AED 125.0 4. Computer - AED 115.0 5. Science - AED 170.0 6. English - AED 150.0 7. Java Programming - AED 248.0 8. Python - AED 130.0 9. C++ - AED 200.0 10. JavaScript - AED 110.0 Enter the number of items in your order: █</pre>	List of books display to user
<pre>Enter the number of items in your order: 3 Enter item #1: 1 Enter item #2: 7 Enter item #3: 5 Order taken successfully! Do you want to add a new item to your order? (y/n) █</pre>	Enter number of books and select books from given list
<pre>Do you want to remove an item from your order? (y/n) y Enter the number of the item from your order that you want to remove: 1. Math 2. Java Programming 3. Science 3 Item removed successfully!</pre>	Delete a selected book from given list
<pre>Bill computed successfully! Your Total bill is: 368.0 Your Total bill after 2% discount is: 360.64 Your Total bill after 5% VAT charges is: 378.67199999999997 Total bill: AED 378.67199999999997</pre>	Bill calculation with discount and VAT

Source code

```
import java.util.Scanner;
```

```

public class Main {
    // Arrays to store the menu items and their prices
    private static String[] menuItems = {"Math", "Arabic", "Geography", "Computer", "Science",
"English", "Java Programming", "Python", " C++ ", "JavaScript"};

    private static double[] menuPrices = { 120.0, 90.0, 125.0, 115.0, 170.0, 150.0, 248.0, 130.0, 200.0,
110.0};

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

        // Display the books list to the customers
        displayMenu();

        // Take order from the customers
        String[] order = takeOrder(sc);

        // Update order by adding a new item from the list
        order = addItem(sc, order);

        // Update order by removing items from the list
        order = removeItem(sc, order);

        // Compute bill for the customer's order
        double bill = computeBill(order);
        System.out.println("Your Total bill is: "+ bill);

        // Give the customer's 2% discount
        bill = applyDiscount(bill);
        System.out.println("Your Total bill after 2% discount is: "+ bill);

        // Deduction of the vat value 5% from the customer's bill

```

```

        bill = applyVAT(bill);
System.out.println("Your Total bill after 5% VAT charges is: "+ bill);
        // Print the final bill for the customer
        System.out.println("Total bill: AED " + bill);
    }

// Method to display the menu to the customers
public static void displayMenu() {
    System.out.println("Menu:");
    for (int i = 0; i < menuItems.length; i++) {
        System.out.println((i+1) + ". " + menuItems[i] + " - AED " + menuPrices[i]);
    }
}

// Method to take order from the customers
public static String[] takeOrder(Scanner sc) {
    System.out.println("Enter the number of items in your order:");
    int numItems = sc.nextInt();
    String[] order = new String[numItems];

    for (int i = 0; i < numItems; i++) {
        System.out.println("Enter item #" + (i+1) + ":");
        int itemNumber = sc.nextInt();
        order[i] = menuItems[itemNumber-1];
    }

    System.out.println("Order taken successfully!");
    return order;
}

```

```

// Method to add a new item to the customer's order
public static String[] addNewItem(Scanner sc, String[] order) {
    System.out.println("Do you want to add a new item to your order? (y/n)");
    String choice = sc.next();

    if (choice.equalsIgnoreCase("y")) {
        displayMenu();
        System.out.println("Enter item #:");
        int itemNumber = sc.nextInt();
        String[] newOrder = new String[order.length + 1];
        for (int i = 0; i < order.length; i++) {
            newOrder[i] = order[i];
        }
        newOrder[newOrder.length-1] = menuItems[itemNumber-1];
        System.out.println("Item added successfully!");
        return newOrder;
    } else {
        return order;
    }
}

// Method to remove items from the customer's order
public static String[] removeItem(Scanner sc, String[] order) {
    System.out.println("Do you want to remove an item from your order? (y/n)");
    String choice = sc.next();

    if (choice.equalsIgnoreCase("y")) {
        System.out.println("Enter the number of the item from your order that you want to remove:");
        for (int i = 0; i < order.length; i++) {
            System.out.println((i+1) + ". " + order[i]);

```

```

}
int itemNumber = sc.nextInt();
    String[] newOrder = new String[order.length - 1];
    int j = 0;
    for (int i = 0; i < order.length; i++) {
        if (i != itemNumber-1) {
            newOrder[j] = order[i];
            j++;
        }
    }

    System.out.println("Item removed successfully!");
    return newOrder;
} else {
    return order;
}
}

```

```

// Method to compute bill for the customer's order
public static double computeBill(String[] order) {
    double bill = 0;
    for (int i = 0; i < order.length; i++) {
        int itemIndex = getIndex(order[i]);
        bill += menuPrices[itemIndex];
    }
    System.out.println("Bill computed successfully!");
    return bill;
}

```

```

// Method to get the index of an item in the menu array

```



```

public static int getIndex(String item) {
    for (int i = 0; i < menuItems.length; i++) {
        if (menuItems[i].equalsIgnoreCase(item)) {
            return i;
        }
    }
    return -1;
}

```

// Method to apply a 2% discount to the customer's bill

```

public static double applyDiscount(double bill) {
    double discount = 0.02 * bill;
    bill -= discount;
    return bill;
}

```

// Method to apply VAT (Value Added Tax) of 5% to the customer's bill

```

public static double applyVAT(double bill) {
    double vat = 0.05 * bill;
    bill += vat;
    return bill;
}
}

```

Assigned Tasks

Insert a table that lists the tasks assigned for every group member

Example:

Student ID	Student Name	Task
H0012345	Nada	Introduction section of the report
	Nada	Develop code for function1
	Alia	User requirements section of the report

	Alia	Develop code for function2
	Maryam	Develop code for creating the menu
	Fatma	Develop the code for the switch statement

References Page

- <https://replit.com/>