

Note:

- The assignment is designed to practice constructor, getter/setter and toString method.
- Create a separate project for each question and create separate file for each class.
- Try to test the functionality by using menu-driven program.

1. Loan Amortization Calculator

Implement a system to calculate and display the monthly payments for a mortgage loan. The system should:

1. Accept the principal amount (loan amount), annual interest rate, and loan term (in years) from the user.
2. Calculate the monthly payment using the standard mortgage formula:
 - o **Monthly Payment Calculation:**
 - $\text{monthlyPayment} = \text{principal} * (\text{monthlyInterestRate} * (1 + \text{monthlyInterestRate})^{(\text{numberOfMonths})}) / ((1 + \text{monthlyInterestRate})^{(\text{numberOfMonths})} - 1)$
 - Where $\text{monthlyInterestRate} = \text{annualInterestRate} / 12 / 100$ and $\text{numberOfMonths} = \text{loanTerm} * 12$
 - Note: Here ^ means power and to find it you can use Math.pow() method
3. Display the monthly payment and the total amount paid over the life of the loan, in Indian Rupees (₹).

Define the class `LoanAmortizationCalculator` with fields, an appropriate constructor, getter and setter methods, a `toString` method and business logic methods. Define the class `LoanAmortizationCalculatorUtil` with methods `acceptRecord`, `printRecord`, and `menuList`. Define the class `Program` with a `main` method and test the functionality of the utility class.

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

```
class LoanAmortizationCalculator{
    private float principal;
    private float annual;
    private int loanTerm;

    public LoanAmortizationCalculator(float principal, float annual, int loanTerm){
        this.principal = principal;
        this.annual = annual;
        this.loanTerm = loanTerm;
    }

    public float getPrincipal(){
        return this.principal;
    }

    public void setPrincipal(float principal){
        this.principal = principal;
    }
}
```

```

    }

    public float getAnnual(){
        return this.annual;
    }
    public void setAnnual(float annual){
        this.annual = annual;
    }

    public float getLoanTerm(){
        return this.loanTerm;
    }
    public void setLoanTerm(int loanTerm){
        this.loanTerm = loanTerm;
    }

    public float calculateMonthlyPayment(){
        int numberOfMonths = loanTerm * 12;
        float monthlyInterestRate = annual / 12 / 100 ;

        float monthlyPayment = (float) (principal * (monthlyInterestRate * Math.pow(1 +
monthlyInterestRate, numberOfMonths)) /
        (Math.pow(1 + monthlyInterestRate, numberOfMonths) - 1));

        return monthlyPayment;
    }

    public float calculateTotalPayment(){
        return calculateMonthlyPayment() * loanTerm * 12;
    }

    public String toString(){
        System.out.println( );
        return "Principal Amount : " + principal + "\n" +
        "Annual interest rate : " + annual + "\n" +
        "Loan term (in years) : " + loanTerm + " years";
    }
}

class LoanAmortizationCalculatorUtil{
    private Scanner sc = new Scanner(System.in);

    public LoanAmortizationCalculator acceptRecord(){

        System.out.println("Enter principal ammount : ");
        float principal = sc.nextFloat();

        System.out.println("Enter annual interest rate : ");

```

```

float annual = sc.nextFloat();

System.out.println("Enter loan term (in years) : ");
int loanTerm = sc.nextInt();

return new LoanAmortizationCalculator(principal, annual, loanTerm);

}

public void printRecord(LoanAmortizationCalculator l ){
    System.out.println(l.toString());

    float monthlyPayment = l.calculateMonthlyPayment();
    float totalPayment = l.calculateTotalPayment();

    System.out.println( );
    System.out.printf("Monthly Payment : %.2f%n", monthlyPayment);
    System.out.printf("Total Amount Paid : %.2f%n", totalPayment);

}

public void menuList(){
    LoanAmortizationCalculator l = acceptRecord();
    printRecord(l);
}

}

public class Demo {

    public static void main(String[] args) {
        LoanAmortizationCalculatorUtil u = new LoanAmortizationCalculatorUtil();
        u.menuList();
    }

}

```

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The screenshot shows an IDE with a Java file named 'Demo.java'. The code defines a class 'LoanAmortizationCalculator' with private fields 'principal', 'annual', and 'loanTerm'. It includes a constructor and methods for getting and setting these fields, as well as a 'calculateMonthlyPayment' method. The output window shows the execution of 'java Demo', where the user enters a principal amount of 500000, an annual interest rate of 9.5, and a loan term of 12 years. The output displays the principal amount, annual interest rate, loan term, monthly payment of 58318.57, and a total amount paid of 8397874.00.

```
1 import java.util.Scanner;
2
3
4 class LoanAmortizationCalculator{
5     private float principal;
6     private float annual;
7     private int loanTerm;
8
9     public LoanAmortizationCalculator(float principal, float annual, int loanTerm){
10         this.principal = principal;
11         this.annual = annual;
12         this.loanTerm = loanTerm;
13     }
14
15     public float getPrincipal(){
16         return this.principal;
17     }
18     public void setPrincipal(float principal){
19         this.principal = principal;
20     }
21
22     public float getAnnual(){
23         return this.annual;
24     }
25     public void setAnnual(float annual){
26         this.annual = annual;
27     }
28
29     public float getLoanTerm(){
30         return this.loanTerm;
31     }
32     public void setLoanTerm(int loanTerm){
33         this.loanTerm = loanTerm;
34     }
35
36     public float calculateMonthlyPayment(){
37         int numberOfMonths = loanTerm * 12;
```

PS D:\Module 2\Day 2\Assignment 2> javac Demo.java
PS D:\Module 2\Day 2\Assignment 2> java Demo
Enter principal amount :
500000
Enter annual interest rate :
9.5
Enter loan term (in years) :
12

Principal Amount : 500000.0
Annual Interest rate : 9.5
Loan term (in years) : 12 years

Monthly Payment : 58318.57
Total Amount Paid : 8397874.00
PS D:\Module 2\Day 2\Assignment 2>

2. Compound Interest Calculator for Investment

Develop a system to compute the future value of an investment with compound interest. The system should:

1. Accept the initial investment amount, annual interest rate, number of times the interest is compounded per year, and investment duration (in years) from the user.
2. Calculate the future value of the investment using the formula:
 - o **Future Value Calculation:**
$$\text{futureValue} = \text{principal} * (1 + \text{annualInterestRate} / \text{numberOfCompounds}) ^ (\text{numberOfCompounds} * \text{years})$$
 - o **Total Interest Earned:** $\text{totalInterest} = \text{futureValue} - \text{principal}$
3. Display the future value and the total interest earned, in Indian Rupees (₹).

Define the class `CompoundInterestCalculator` with fields, an appropriate constructor, getter and setter methods, a `toString` method and business logic methods. Define the class `CompoundInterestCalculatorUtil` with methods `acceptRecord`, `printRecord`, and `menuList`. Define the class `Program` with a `main` method to test the functionality of the utility class.

```
package com.string;
```

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

```
class CompoundInterestCalculator{  
    private double amount;  
    private double annual;  
    private int numberOfCompounds;  
    private int loanTerm;
```

```

    public CompoundInterestCalculator(double amount, double annual, int
numberOfCompounds, int loanTerm) {
        this.amount = amount;
        this.annual = annual;
        this.loanTerm = loanTerm;
        this.numberOfCompounds = numberOfCompounds;
    }

    public double getAmount() {
        return amount;
    }
    public void setAmount(double amount) {
        this.amount = amount;
    }

    public double getAnnual() {
        return annual;
    }
    public void setAnnual(double annual) {
        this.annual = annual;
    }

    public int getLoanTerm() {
        return loanTerm;
    }
    public void setLoanTerm(int loanTerm) {
        this.loanTerm = loanTerm;
    }

    public int getNumberOfCompounds() {
        return numberOfCompounds;
    }
    public void setNumberOfCompounds(int numberOfCompounds) {
        this.numberOfCompounds = numberOfCompounds;
    }

    public double futureValue() {
        return amount * Math.pow((1 + annual / numberOfCompounds),
numberOfCompounds * loanTerm);
    }

    public double totalInterest() {
        return futureValue() - amount;
    }

    public String toString() {
        System.out.println( );
        return "Initial investment amount : " + amount + "\n" +
            "Annual interest rate : " + annual + "\n" +

```

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```

        "Number of times the interest is compounded per year : " +
        numberOfCompounds + "\n" +
        "Investment duration (in years) : " + loanTerm + "years";
    }

}

class CompoundInterestCalculatorUtil{
    private Scanner sc = new Scanner(System.in);

    public CompoundInterestCalculator acceptRecord() {
        System.out.print("Enter initial investment amount : ");
        double amount = sc.nextDouble();

        System.out.print("Enter annual interest rate : ");
        double annual = sc.nextDouble();

        System.out.print("Enter number of times the interest is compounded per year : ");
        int numberOfCompounds = sc.nextInt();

        System.out.print("Enter investment duration (in years) : ");
        int loanTerm = sc.nextInt();

        return new
CompoundInterestCalculator(amount,annual,numberOfCompounds,loanTerm);
    }

    public void printRecord(CompoundInterestCalculator c) {
        System.out.println(c.toString());

        System.out.println( );
        System.out.printf("Futur Value : %.2f%n", c.futureValue());
        System.out.printf("Total Value : %.2f%n", c.totalInterest());
    }

    public void menuList() {
        System.out.println( );
        System.out.println("Enter 1 to Enter detail :");
        System.out.println("    2 to calculate and display future & total value :");
        System.out.println("    3 to exit :");
    }
}

public class CompoundLoan {
    public static void main(String args[]) {
        CompoundInterestCalculatorUtil u = new CompoundInterestCalculatorUtil();
        CompoundInterestCalculator c = null;
        Scanner sc = new Scanner(System.in);
        boolean exit = false;
    }
}

```

```

while(!exit) {
    u.menuList();
    System.out.print("Enter your choice : ");
    int choice = sc.nextInt();

    switch(choice) {
        case 1 :
            c = u.acceptRecord();
            break;
        case 2 :
            if(c != null) {
                u.printRecord(c);
            }
            else {
                System.out.println("Please enter the detail
first!");
            }
            break;
        case 3:
            exit = true;
            break;
        default:
            System.out.println("Invalid choice! Please try again...");
    }

    }
    sc.close();
}
}

```

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```
127     int choice = sc.nextInt();
128
129     switch(choice) {
130         case 1 :
131             c = u.acceptRecord();
132             break;
133         case 2 :
134             if(c != null) {
135                 u.printRecord(c);
136             }
137             else {
138                 System.out.println("Invalid choice");
139             }
140             break;
141         case 3:
142             exit = true;
143             break;
144         default:
145             System.out.println("Invalid choice");
146     }
147
148 }
149
150 sc.close();
151
152 }
```

Enter 1 to Enter detail :
2 to calculate and display future & total value :
3 to exit :
Enter your choice : 1
Enter initial investment amount : 10000
Enter annual interest rate : 0.05
Enter number of times the interest is compounded per year : 12
Enter investment duration (in years) : 5

Enter 1 to Enter detail :
2 to calculate and display future & total value :
3 to exit :
Enter your choice : 2

Initial investment amount : 10000.0
Annual interest rate : 0.05
Number of times the interest is compounded per year : 12
Investment duration (in years) : 5years

Futur Value : 12833.59
Total Value : 2833.59

3. BMI (Body Mass Index) Tracker

Create a system to calculate and classify Body Mass Index (BMI). The system should:

1. Accept weight (in kilograms) and height (in meters) from the user.
2. Calculate the BMI using the formula:
 - o **BMI Calculation:** $BMI = \text{weight} / (\text{height} * \text{height})$
3. Classify the BMI into one of the following categories:
 - o Underweight: $BMI < 18.5$
 - o Normal weight: $18.5 \leq BMI < 24.9$
 - o Overweight: $25 \leq BMI < 29.9$
 - o Obese: $BMI \geq 30$
4. Display the BMI value and its classification.

Define the class `BMITracker` with fields, an appropriate constructor, getter and setter methods, a `toString` method, and business logic methods. Define the class `BMITrackerUtil` with methods `acceptRecord`, `printRecord`, and `menuList`. Define the class `Program` with a `main` method to test the functionality of the utility class.

```
package com.string;  
import java.util.Scanner;
```

```
class BMITracker{  
    private double weight;  
    private double height;  
  
    public BMITracker(double weight, double height){  
        this.weight = weight;  
        this.height = height;  
    }  
}
```



```

    public double getWeight() {
        return weight;
    }
    public void setWeight(double weight) {
        this.weight = weight;
    }

    public double getHeight() {
        return height;
    }
    public void setHeight(double height) {
        this.height = height;
    }

    public double calculateBMI() {
        double h = height / 100;
        double bmi = weight / (h * h);
        return bmi;
    }

    public String classifyCategory() {
        String category = "";
        double bmi = calculateBMI();
        if(bmi < 18.5) {
            category = "Underweight";
        }
        else if(bmi >= 18.5 && bmi < 24.9) {
            category = "Normal weight";
        }
        else if(bmi >= 25 && bmi < 29.9) {
            category = "Overweight";
        }
        else {
            category = "Obese";
        }
        return category;
    }

    public String toString() {
        return "Weight : " + weight + "\n" +
            "height : " + height;
    }
}

class BMITrackerUtil{
    private Scanner sc = new Scanner(System.in);

    public BMITracker acceptRecord() {
        System.out.print("Enter your weight in kg : ");
    }
}

```

```

        double weight = sc.nextDouble();

        System.out.print("Enter your height in cm : ");
        double height = sc.nextDouble();

        return new BMITracker(weight, height);
    }

    public void printRecord(BMITracker b) {
        System.out.println(b.toString());

        System.out.printf("BMI : %.2f\n", b.calculateBMI());
        System.out.println("Category : " + b.classifyCategory());
    }

    public void menuList() {
        System.out.println("Enter    1 to enter details");
        System.out.println("    2 to display details");
        System.out.println("    3 to exit");
    }
}

public class BMI {
    public static void main(String args[]) {
        BMITrackerUtil u = new BMITrackerUtil();
        BMITracker b = null;
        Scanner sc = new Scanner(System.in);

        boolean exit = false;

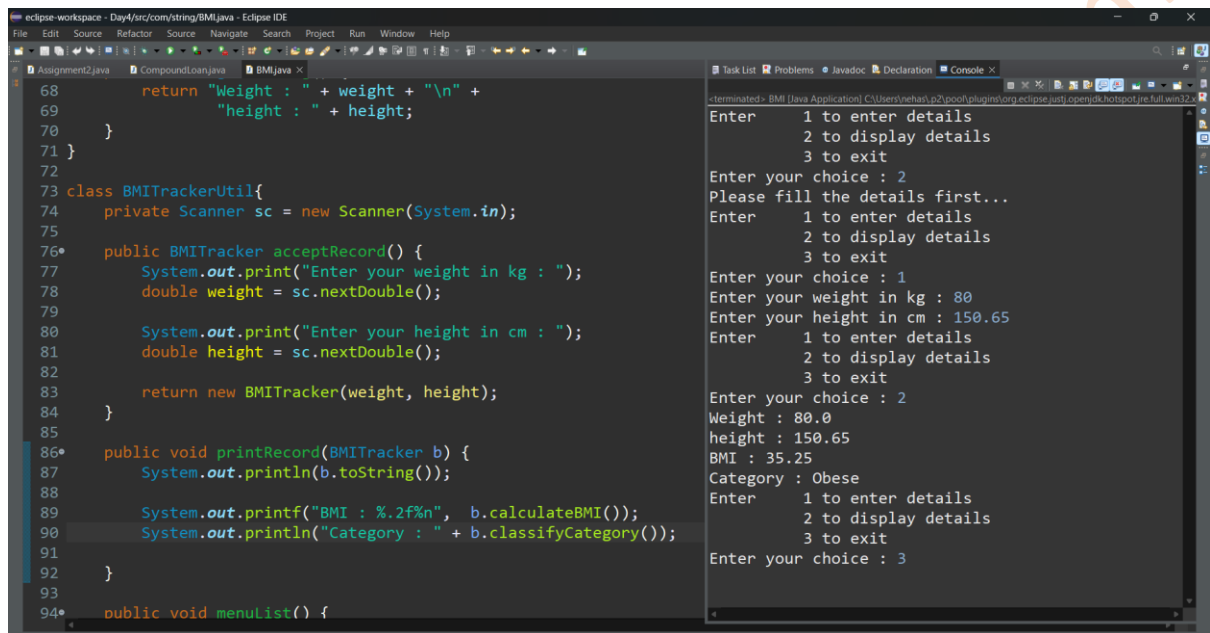
        while(exit != true) {
            u.menuList();
            System.out.print("Enter your choice : ");
            int choice = sc.nextInt();

            switch(choice) {
                case 1:
                    b = u.acceptRecord();
                    break;
                case 2:
                    if(b != null) {
                        u.printRecord(b);
                    }
                    else {
                        System.out.println("Please fill the details
first...");
                    }
                    break;
                case 3:

```

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```
        exit = true;
        break;
    default:
        System.out.println("Invalid choice! Please try again..");
    }
}
sc.close();
}
```



The screenshot shows the Eclipse IDE with a project named 'BMI.java'. The editor displays the source code for 'BMITrackerUtil.java'. The code includes a Scanner for user input, methods for accepting and printing records, and a menu list. The console window on the right shows the program's execution, including prompts for weight and height, BMI calculation, and category classification.

```
68     return "Weight : " + weight + "\n" +
69           "height : " + height;
70 }
71 }
72
73 class BMITrackerUtil{
74     private Scanner sc = new Scanner(System.in);
75
76     public BMITracker acceptRecord() {
77         System.out.print("Enter your weight in kg : ");
78         double weight = sc.nextDouble();
79
80         System.out.print("Enter your height in cm : ");
81         double height = sc.nextDouble();
82
83         return new BMITracker(weight, height);
84     }
85
86     public void printRecord(BMITracker b) {
87         System.out.println(b.toString());
88
89         System.out.printf("BMI : %.2f\n", b.calculateBMI());
90         System.out.println("Category : " + b.classifyCategory());
91     }
92 }
93
94     public void menuList() {
```

Console Output:

```
<terminated> BMI [Java Application] C:\Users\neha\p2\poo\plugins\org.eclipse.jdt.ui.openjdk.hotspot.jre.full.win32.x86_64
Enter 1 to enter details
2 to display details
3 to exit
Enter your choice : 2
Please fill the details first...
Enter 1 to enter details
2 to display details
3 to exit
Enter your choice : 1
Enter your weight in kg : 80
Enter your height in cm : 150.65
Enter 1 to enter details
2 to display details
3 to exit
Enter your choice : 2
Weight : 80.0
height : 150.65
BMI : 35.25
Category : Obese
Enter 1 to enter details
2 to display details
3 to exit
Enter your choice : 3
```

4. Discount Calculation for Retail Sales

Design a system to calculate the final price of an item after applying a discount. The system should:

1. Accept the original price of an item and the discount percentage from the user.
2. Calculate the discount amount and the final price using the following formulas:
 - o **Discount Amount Calculation:** $\text{discountAmount} = \text{originalPrice} * (\text{discountRate} / 100)$
 - o **Final Price Calculation:** $\text{finalPrice} = \text{originalPrice} - \text{discountAmount}$
3. Display the discount amount and the final price of the item, in Indian Rupees (₹).

Define the class `DiscountCalculator` with fields, an appropriate constructor, getter and setter methods, a `toString` method, and business logic methods. Define the class `DiscountCalculatorUtil` with methods `acceptRecord`, `printRecord`, and `menuList`. Define the class `Program` with a `main` method to test the functionality of the utility class.

```
package com.string;
import java.util.Scanner;

class DiscountCalculator{
    private double originalPrice;
    private double discountRate;

    public DiscountCalculator(double originalPrice, double discountRate) {
        this.originalPrice = originalPrice;
        this.discountRate = discountRate;
    }

    public double getOriginalPrice() {
        return originalPrice;
    }

    public void setOriginalPrice(double originalPrice) {
        this.originalPrice = originalPrice;
    }

    public double getDiscountRate() {
        return discountRate;
    }

    public void setDiscountRate(double discountRate) {
        this.discountRate = discountRate;
    }

    public double discountAmount() {
        return originalPrice * (discountRate / 100);
    }

    public double finalPrice() {
        return originalPrice - discountAmount();
    }

    public String toString() {
        return "Original Price : " + originalPrice + "\n" +
            "Discount Rate : " + discountRate;
    }
}

class DiscountCalculatorUtil{
    private Scanner sc = new Scanner(System.in);
```

```

    }

    public void printRecord(DiscountCalculator d) {
        System.out.println(d.toString());
        System.out.printf("Discount Amount : %.2f%n", d.discountAmount());
        System.out.printf("Final Price : %.2f%n", d.finalPrice());
    }

    public void menuList() {
        System.out.println("Enter 1 to fill details");
        System.out.println("    2 to display details");
        System.out.println("    3 to exit");
    }
}

public class Discount {
    public static void main(String[] args) {
        DiscountCalculatorUtil u = new DiscountCalculatorUtil();
        DiscountCalculator d = null;
        Scanner sc = new Scanner(System.in);

        boolean exit = false;

        while(exit != true) {
            u.menuList();
            System.out.print("Enter your choice : ");
            int choice = sc.nextInt();

```

```

else {
    System.out.println("Please enter the above
details....");
}
break;
case 3:
    exit = true;
    break;
default :
    System.out.println("Invalid choice! Please try again...");
}
}
sc.close();
}
}

```

The screenshot shows the Eclipse IDE with a Java file named `Discount.java`. The code implements a menu-driven application for calculating discounts. It uses a `while` loop to keep the application running until the user chooses to exit (option 3). The `switch` statement handles three main options: 1 (fill details), 2 (display details), and 3 (exit). For option 1, it prompts for an original price and a discount rate, then calculates the discount amount and final price. For option 2, it displays the current details. For option 3, it exits the loop. The console output shows the user interacting with the application, entering choices and details, and seeing the calculated final price.

```

89 while(exit != true) {
90     u.menuList();
91     System.out.print("Enter your choice : ");
92     int choice = sc.nextInt();
93
94     switch(choice) {
95         case 1:
96             d = u.acceptRecord();
97             break;
98         case 2:
99             if(d != null) {
100                 u.printRecord(d);
101             }
102             else {
103                 System.out.println("Please enter the above d
104             }
105             break;
106         case 3:
107             exit = true;
108             break;
109         default :
110             System.out.println("Invalid choice! Please try a
111     }
112     }
113     sc.close();
114 }
115 }

```

Console Output:

```

Enter 1 to fill details
2 to display details
3 to exit
Enter your choice : 4
Invalid choice! Please try again...
Enter 1 to fill details
2 to display details
3 to exit
Enter your choice : 2
Please enter the above details....
Enter 1 to fill details
2 to display details
3 to exit
Enter your choice : 1
Enter the original price in Rs. : 500
Enter the discount rate in % : 20
Enter 1 to fill details
2 to display details
3 to exit
Enter your choice : 2
Original Price : 500.0
Discount Rate : 20.0
Discount Amount : 100.00
Final Price : 400.00
Enter 1 to fill details

```

5. Toll Booth Revenue Management

Develop a system to simulate a toll booth for collecting revenue. The system should:

1. Allow the user to set toll rates for different vehicle types: Car, Truck, and Motorcycle.
2. Accept the number of vehicles of each type passing through the toll booth.
3. Calculate the total revenue based on the toll rates and number of vehicles.
4. Display the total number of vehicles and the total revenue collected, in Indian Rupees (₹).

• Toll Rate Examples:

- Car: ₹50.00
- Truck: ₹100.00
- Motorcycle: ₹30.00

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Define the class `TollBoothRevenueManager` with fields, an appropriate constructor, getter and setter methods, a `toString` method, and business logic methods. Define the class `TollBoothRevenueManagerUtil` with methods `acceptRecord`, `printRecord`, and `menuList`. Define the class `Program` with a `main` method to test the functionality of the utility class.

```
package com.string;
import java.util.Scanner;

class TollBoothRevenueManager{
    private double carToll;
    private double truckToll;
    private double motorToll;

    private int carCount;
    private int truckCount;
    private int motorCount;

    public TollBoothRevenueManager(double carToll, double truckToll, double
motorToll, int carCount, int truckCount, int motorCount) {
        this.carToll = carToll;
        this.truckToll = truckToll;
        this.motorToll = motorToll;
        this.carCount = carCount;
        this.truckCount = truckCount;
        this.motorCount = motorCount;
    }

    public double getCarToll() {
        return carToll;
    }
    public void setCarToll(double carToll) {
        this.carToll = carToll;
    }

    public double getTruckToll() {
        return truckToll;
    }
    public void setTruckToll(double truckToll) {
        this.truckToll = truckToll;
    }

    public double getMotorToll() {
        return motorToll;
    }
    public void setMotorToll(double motorToll) {
        this.motorToll = motorToll;
    }
}
```

```

    }

    public int getCarCount() {
        return carCount;
    }
    public void setCarCount(int carCount) {
        this.carCount = carCount;
    }

    public int getTruckCount() {
        return truckCount;
    }
    public void setTruckCount(int truckCount) {
        this.truckCount = truckCount;
    }

    public int getMotorCount() {
        return motorCount;
    }
    public void setMotorCount(int motorCount) {
        this.motorCount = motorCount;
    }

    public int totalNoOfVehicles() {
        return carCount + truckCount + motorCount;
    }

    public double totalRevenue() {
        return (carCount*carToll) + (truckCount*truckToll) +(motorCount*motorToll);
    }

    public String toString() {
        return "Car Toll : " + carToll + "\n" +
               "Truck Toll : " + truckToll + "\n" +
               "Motorcycle Toll : " + motorToll + "\n" +
               "Car Count : " + carCount + "\n" +
               "Truck Count : " + truckCount + "\n" +
               "Motorcycle Count : " + motorCount;
    }
}

class TollBoothRevenueManagerUtil{
    private Scanner sc = new Scanner(System.in);

    public TollBoothRevenueManager acceptRecord() {

        System.out.print("Enter car toll : ");
    }
}

```



```

        double carToll = sc.nextDouble();

        System.out.print("Enter truck toll : ");
        double truckToll = sc.nextDouble();

        System.out.print("Enter motorcycle toll : ");
        double motorToll = sc.nextDouble();

        System.out.print("Enter car count : ");
        int carCount = sc.nextInt();

        System.out.print("Enter truck count : ");
        int truckCount = sc.nextInt();

        System.out.print("Enter Motorcycle count : ");
        int motorCount = sc.nextInt();

        return new
TollBoothRevenueManager(carToll,truckToll,motorToll,carCount,truckCount,motorCount);
    }

    public void printRecord(TollBoothRevenueManager t) {
        System.out.println(t.toString());
        System.out.println("Total no. of vehicles : " + t.totalNoOfVehicles());
        System.out.printf("Total Revenue : %.2f%n", t.totalRevenue());
    }

    public void menuList() {
        System.out.println("Enter 1 to fill details");
        System.out.println("    2 to display details");
        System.out.println("    3 to exit");
    }
}

public class Tollbooth {
    public static void main(String[] args) {
        TollBoothRevenueManagerUtil u = new TollBoothRevenueManagerUtil();
        TollBoothRevenueManager d = null;
        Scanner sc = new Scanner(System.in);

        boolean exit = false;

        while(exit != true) {
            u.menuList();
            System.out.print("Enter your choice : ");
            int choice = sc.nextInt();

```

ASSIGNMENT NO.4

```

switch(choice) {
    case 1:
        d = u.acceptRecord();
        break;
    case 2:
        if(d != null) {
            u.printRecord(d);
        }
        else {
            System.out.println("Please enter the above
details....");
        }
        break;
    case 3:
        exit = true;
        break;
    default :
        System.out.println("Invalid choice! Please try again...");
}
}
sc.close();
}
}

```

The screenshot shows the Eclipse IDE with the file `TollBoothRevenueManager.java` open. The code in the editor is as follows:

```

1 package com.string;
2 import java.util.Scanner;
3
4 class TollBoothRevenueManager{
5     private double carToll;
6     private double truckToll;
7     private double motorToll;
8
9     private int carCount;
10    private int truckCount;
11    private int motorCount;
12
13    public TollBoothRevenueManager(double carToll, double truckToll,
14        this.carToll = carToll;
15        this.truckToll = truckToll;
16        this.motorToll = motorToll;
17        this.carCount = carCount;
18        this.truckCount = truckCount;
19        this.motorCount = motorCount;
20    }
21
22    public double getCarToll() {
23        return carToll;
24    }
25    public void setCarToll(double carToll) {
26        this.carToll = carToll;
27    }

```

The console output on the right shows the program's execution:

```

Enter your choice : 1
Enter car toll : 50.00
Enter truck toll : 100.00
Enter motorcycle toll : 30.00
Enter car count : 10
Enter truck count : 20
Enter Motorcycle count : 30
Enter 1 to fill details
2 to display details
3 to exit
Enter your choice : 2
Car Toll : 50.0
Truck Toll : 100.0
Motorcycle Toll : 30.0
Car Count : 10
Truck Count : 20
Motorcycle Count : 30
Total no. of vehicles : 60
Total Revenue : 3400.00
Enter 1 to fill details
2 to display details
3 to exit
Enter your choice : 4
Invalid choice! Please try again...
Enter 1 to fill details

```