Question No-1

**package** com.assignment;

**import** java.util.Scanner;

**public** **class** LoanAmortizationCalculator {

**private** **long** loanAmount;

**private** **double** interestRate;

**private** **int** loanTerm;

**private** **double** monthlyPayment;

**private** **double** totalPayment;

**public** **void** acceptRecord() {

Scanner scan = **new** Scanner(System.***in***);

System.***out***.println("Enter the Loan Amount :");

**this**.loanAmount = scan.nextLong();

System.***out***.println("Enter the Interest Rate :");

**this**.interestRate = scan.nextFloat();

System.***out***.println("Enter the Loan Term :");

**this**.loanTerm = scan.nextInt();

}

**public** **void** calculateMonthlyPayment() {

**double** monthlyInterestRate = interestRate / 12 / 100;

**double** numberOfMonths = loanTerm \* 12;

**this**.monthlyPayment = loanAmount \* (monthlyInterestRate \* Math.*pow*(1 + monthlyInterestRate, numberOfMonths))

/ (Math.*pow*(1 + monthlyInterestRate, numberOfMonths) - 1);

**this**.totalPayment = monthlyPayment \* numberOfMonths;

}

**public** **void** printRecord() {

System.***out***.println("Monthly Payment is : " + monthlyPayment);

System.***out***.println("Total Payment is : " + totalPayment);

}

**public** **static** **void** main(String[] args) {

LoanAmortizationCalculator lac = **new** LoanAmortizationCalculator();

lac.acceptRecord();

lac.calculateMonthlyPayment();

lac.printRecord();

}

}

Question No-2

**package** com.assignment;

**import** java.util.Scanner;

**public** **class** CompoundInterestCalculator {

**private** **double** initialInvestmentAmount;

**private** **double** annualInterestRate;

**private** **int** numberOfCompounds;

**private** **int** investmentDuration;

**private** **double** futureValue;

**private** **double** totalInterest;

**public** **void** acceptRecord() {

Scanner scan=**new** Scanner(System.***in***);

System.***out***.println("Enter the Initial Investment Amount :");

**this**.initialInvestmentAmount = scan.nextDouble();

System.***out***.println("Enter the Annual Interest Rate :");

**this**.annualInterestRate = scan.nextDouble();

System.***out***.println("Enter the Number of times interest is compounded :");

**this**.numberOfCompounds = scan.nextInt();

System.***out***.println("Enter the Investment Duration :");

**this**.investmentDuration = scan.nextInt();

}

**public** **void** calculateFutureValue() {

//Future Value Calculation

**this**.futureValue=initialInvestmentAmount\*Math.*pow*((1 + annualInterestRate / numberOfCompounds), numberOfCompounds \* investmentDuration);

//Total Interest Earned

**this**.totalInterest = futureValue - initialInvestmentAmount;

}

**public** **void** printRecord() {

System.***out***.println("Future Value is : "+**this**.futureValue);

System.***out***.println("Total Interest Earned : "+**this**.totalInterest);

}

**public** **static** **void** main(String[] args) {

CompoundInterestCalculator cic=**new** CompoundInterestCalculator();

cic.acceptRecord();

cic.calculateFutureValue();

cic.printRecord();

}

}

Question No-3

**package** com.assignment;

**import** java.util.Scanner;

**public** **class** DiscountCalculator {

**private** **double** original\_price;

**private** **double** discount\_percentage;

**private** **double** discountAmount;

**private** **double** finalPrice;

**public** **void** acceptRecord() {

Scanner scan=**new** Scanner(System.***in***);

System.***out***.println("Enter the Original Price :");

**this**.original\_price = scan.nextDouble();

System.***out***.println("Enter the Discount Percentage :");

**this**.discount\_percentage = scan.nextDouble();

}

**public** **void** calculateDiscount() {

//Discount Amount Calculation

discountAmount = original\_price \* (discount\_percentage / 100);

//Final Price Calculation

finalPrice = original\_price - discountAmount;

}

**public** **void** printRecord() {

System.***out***.println("Discount Amount : "+discountAmount);

System.***out***.println("Final Price : "+finalPrice);

}

**public** **static** **void** main(String[] args) {

DiscountCalculator dc=**new** DiscountCalculator();

dc.acceptRecord();

dc.calculateDiscount();

dc.printRecord();

}

}

Question No-4

**package** com.assignment;

**import** java.util.Scanner;

**public** **class** BMITracker {

**private** **double** weight;

**private** **double** height;

**private** **double** bmi;

**public** **void** acceptRecord() {

Scanner scan=**new** Scanner(System.***in***);

System.***out***.println("Enter the Weight :");

**this**.weight = scan.nextDouble();

System.***out***.println("Enter the height :");

**this**.height = scan.nextDouble();

}

**public** **void** calculateBmi() {

bmi = weight / (height \* height);

}

**public** **void** classifyBmi(**double** bmi) {

**if**(bmi<18.5) {

System.***out***.println("Underweight");

}**else** **if**(bmi>=18.5 && bmi<24.9) {

System.***out***.println("Normal Weight");

}**else** **if**(bmi>=25 && bmi<29.9) {

System.***out***.println("Overweight");

}**else** {

System.***out***.println("Obese");

}

}

**public** **void** printRecord() {

System.***out***.println("Your BMI is:"+ bmi);

BMITracker bm=**new** BMITracker();

bm.classifyBmi(bmi);

}

**public** **static** **void** main(String[] args) {

BMITracker bm=**new** BMITracker();

bm.acceptRecord();

bm.calculateBmi();

bm.printRecord();

}

}

Question No-5

**package** com.assignment;

**import** java.util.Scanner;

**public** **class** TollBoothRevenueManager {

**private** **double** carRate;

**private** **int** carNumber;

**private** **double** truckRate;

**private** **int** truckNumber;

**private** **double** motorcycleRate;

**private** **int** motorcycleNumber;

**private** **double** carRevenue;

**private** **double** truckRevenue;

**private** **double** motorcycleRevenue;

**void** acceptRecord(Scanner sc) {

System.***out***.println("Enter Number of Cars: ");

**this**.carNumber = sc.nextInt();

System.***out***.println("Enter Number of Truck: ");

**this**.truckNumber= sc.nextInt();

System.***out***.println("Enter Number of Motorcycle: ");

**this**.motorcycleNumber= sc.nextInt();

}

**void** setTollRates(Scanner sc){

System.***out***.println("Enter Rate per Car: ");

**this**.carRate = sc.nextDouble();

System.***out***.println("Enter Rate per Truck: ");

**this**.truckRate= sc.nextDouble();

System.***out***.println("Enter Rate per Motorcycle: ");

**this**.motorcycleRate= sc.nextDouble();

}

**void** calculateRevenue() {

**this**.carRevenue = **this**.carRate \* **this**.carNumber;

**this**.truckRevenue = **this**.truckRate \* **this**.truckNumber;

**this**.motorcycleRevenue = **this**.motorcycleRate \* **this**.motorcycleNumber;

}

**void** printRecord() {

calculateRevenue();

System.***out***.println("Total Revenue is: ");

System.***out***.println("Car: " + **this**.carRevenue);

System.***out***.println("Truck: " + **this**.truckRevenue);

System.***out***.println("Motorcycle: " + **this**.motorcycleRevenue);

}

**public** **static** **void** main(String[] args) {

Scanner sc = **new** Scanner(System.***in***);

TollBoothRevenueManager t1 = **new** TollBoothRevenueManager();

t1.setTollRates(sc);

t1.acceptRecord(sc);

t1.printRecord();

}

}