Assignment 3

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 = weight / (height \* height) 3. Classify the BMI into one of the following categories: o Underweight: BMI < 18.5 o Normal weight: 18.5 ≤ BMI < 24.9 o Overweight: 25 ≤ BMI < 29.9 o Obese: BMI ≥ 30 4. Display the BMI value and its classification. Define class BMITracker with methods acceptRecord, calculateBMI, classifyBMI & printRecord and test the functionality in main method.

package com.BMI;

import java.util.Scanner;

public class Bmi\_Tracker {

double weight, height;

public void acceptRecord() {

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

System.***out***.print("Enter your weight (in kg): ");

weight = scanner.nextDouble();

System.***out***.print("Enter your height (in meters): ");

height = scanner.nextDouble();

}

public double calculateBMI() {

return weight / (height \* height);

}

public String classifyBMI() {

double bmi = calculateBMI();

if (bmi < 18.5) {

System.out.println("Underweight");

} else if (bmi < 24.9) {

System.out.println("Normal weight";

} else if (bmi < 29.9) {

System.out.println("Overweight";

else {

System.out.println("Obese");

}

public void printRecord() {

double bmi = calculateBMI ();

String classification = classifyBMI ();

System.***out***.printf("BMI: "+bmi);

}

public static void main(String[] args) {

Bmi\_Tracker tracker = new Bmi\_Tracker ();

tracker.acceptRecord();

tracker.printRecord();

}

}

**Q 2.**

package com.interest;

import java.util.Scanner;

public class Compund\_Interest {

double principal, annualInterestRate, numberOfCompounds, years;

public void acceptRecord() {

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

System.***out***.print("Enter initial investment amount: ");

principal = scanner.nextDouble();

System.***out***.print("Enter annual interest rate (in %): ");

annualInterestRate = scanner.nextDouble();

System.***out***.print("Enter number of times interest is compounded per year: ");

numberOfCompounds = scanner.nextDouble();

System.***out***.print("Enter investment duration (in years): ");

years = scanner.nextDouble();

}

public double calculateFutureValue() {

return principal \* Math.*pow*(1 + (annualInterestRate / numberOfCompounds / 100),

numberOfCompounds \* years);

}

public void printRecord() {

double futureValue = calculateFutureValue();

double totalInterest = futureValue - principal;

System.***out***.printf("Future Value: "+futureValue);

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

}

public static void main(String[] args) {

Compund\_Interest calculator = new Compund\_Interest();

calculator.acceptRecord();

calculator.printRecord();

}

}

**Q5**

package com.revenue;

import java.util.Scanner;

public class revenue\_management {

double carRate, truckRate, motorcycleRate;

int carCount, truckCount, motorcycleCount;

public void setToll\_Rates() {

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

System.***out***.print("Enter toll rate for Cars: ");

carRate = sc.nextDouble();

System.***out***.print("Enter toll rate for Trucks: ");

truckRate = sc.nextDouble();

System.***out***.print("Enter toll rate for Motorcycles: ");

motorcycleRate = sc.nextDouble();

}

public void accept\_Record() {

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

System.***out***.print("Enter number of Cars: ");

carCount = sc.nextInt();

System.***out***.print("Enter number of Trucks: ");

truckCount = sc.nextInt();

System.***out***.print("Enter number of Motorcycles: ");

motorcycleCount = sc.nextInt();

}

public double calculateRevenue() {

return (carCount \* carRate) + (truckCount \* truckRate) + (motorcycleCount \* motorcycleRate);

}

public void printRecord() {

double totalRevenue = calculateRevenue();

int totalVehicles = carCount + truckCount + motorcycleCount;

System.***out***.println("Total number of vehicles: " +totalVehicles);

System.***out***.printf("Total revenue collected: "+totalRevenue);

}

public static void main(String[] args) {

revenue\_management manager = new revenue\_management ();

manager.setToll\_Rates();

manager.accept\_Record();

manager.printRecord();

}

}