**CS1073**

**FR03B**

**Lab #4**

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**Question I:**

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The class is used to track the sleep of user

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import java.util.Scanner;

public class SleepTracker {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

System.out.print("Enter your optimal sleep time in hours: ");

double optimalTime = scan.nextDouble();

int nightCount = 0;

int belowOptimalSleep = 0;

double totalSleepTime = 0;

double lowestSleepTime = 0;

System.out.print("Enter your sleep history terminated with a negative number: ");

double sleepHistory = scan.nextDouble();

lowestSleepTime = sleepHistory;

while (sleepHistory != -1) {

if (optimalTime > sleepHistory) {

belowOptimalSleep++;

}

if (sleepHistory <= lowestSleepTime) {

lowestSleepTime = sleepHistory;

}

totalSleepTime += sleepHistory;

nightCount++;

sleepHistory = scan.nextDouble();

}

double averageSleepTime = (double)totalSleepTime/nightCount;

System.out.println(nightCount + " nights: " + belowOptimalSleep + " nights below your optimal sleep time");

System.out.println("Lowest sleep time: " + lowestSleepTime + " hours");

System.out.println("Average sleep time: " + averageSleepTime + " hours");

}

}

**Output:**

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

**Question II:**

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This class is used to calculate the insurance quote of a vechicle

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\*/

import java.util.Scanner;

public class InsuranceQuote {

public static void main(String[] args) {

Scanner scan = new Scanner(System.in);

final int baseRate = 900;

double insuranceQuote = baseRate;

System.out.print("Enter the model year of the vehicle: ");

int modelYear = scan.nextInt();

if (modelYear < 2016) {

insuranceQuote += 50; // surcharge of 50 dollars if model is older than 2016

}

System.out.print("Enter your age: ");

int driverAge = scan.nextInt();

scan.nextLine(); // Consume the newline character

if (driverAge < 25) {

String eduDriveCourse = "";

System.out.print("Did you complete a driver education course (enter yes or no): ");

while (true) {

eduDriveCourse = scan.nextLine();

if (eduDriveCourse.equals("yes")) {

insuranceQuote += 75; // additional charge of 75 if driver course complete

break;

}

else if (eduDriveCourse.equals("no")) {

insuranceQuote += 175; // additional charge of 175 otherwise

break;

}

System.out.print("Enter yes or no: ");

}

}

System.out.print("Do you drive the vehicle to work (enter yes or no): ");

while (true) {

String driveToWork = scan.nextLine();

if (driveToWork.equals("yes")) {

System.out.print("What is the distance of your commute in km: ");

double distanceToCommute = scan.nextDouble();

scan.nextLine();

if (distanceToCommute < 20) {

insuranceQuote += 100; // distance to commute less than 20 than 100 fees

break;

}

else {

insuranceQuote += 150; // additional fee of 150 otherwise

break;

}

}

else if (driveToWork.equals("no")) {

break;

}

System.out.print("Enter yes or no: ");

}

System.out.println("");

System.out.println("Insurance Rate: $" + insuranceQuote);

}

}

**Output:**

A screenshot of a computer

Description automatically generated

A computer screen shot of a program

Description automatically generated

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated