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CB.SC.U4CYS23004

LAB 2:

1)

```java
import java.util.Scanner;

public class BMICalculator{
    Run main | Debug main | Run | Debug
    public static void main(String[] args){
        Scanner scanner = new Scanner(System.in);

        System.out.print(s:"Enter the weight of the person in kg: ");
        double weight = scanner.nextDouble();

        System.out.print(s:"Enter the height of the person in meters: ");
        double height = scanner.nextDouble();

        double BMI = calculateBMI(weight, height);

        System.out.printf(format:"Your BMI is: %.2f\n", BMI);
        System.out.println(getBMICategory(BMI));

        scanner.close();
    }

    public static double calculateBMI(double weight, double height) {
        return weight / (height * height);
    }

    public static String getBMICategory (double BMI) {
        if (BMI < 18.5){
            return ("You are underweight");
        } else if (BMI >= 18.5 && BMI < 25.0){
            return ("You have a normal weight");
        } else if (BMI >= 25.0 && BMI < 30.0){
            return ("You have a heavy weight");
        } else{
            return ("You are overweight");
        }
    }
}
```

```
C:\Users\arivu\Desktop\2nd year 4th sem\Java programming\Java programming
deDetailsInExceptionMessages -cp "C:\Users\arivu\AppData\Roaming\Code\User
lab 2_68c5ffa1\bin" BMICalculator "
Enter the weight of the person in kg: 50
Enter the height of the person in meters: 1.3
Your BMI is: 29.59
You have a heavy weight
```

2)

```java
import java.util.Scanner;

class Time{
    private int hour;
    private int minute;
    private  int second;

    public Time (int hour, int minute, int second){
        this.hour = hour;
        this.minute = minute;
        this.second = second;
    }

    public Time addTime (Time other){
        int totalSeconds = this.second + other.second;
        int totalMinutes = this.minute + other.minute + totalSeconds / 60;
        int totalHours = this.hour + other.hour + totalMinutes / 60;

        int finalSecond = totalSeconds % 60;
        int finalMinute = totalMinutes % 60;
        int finalHour = totalHours % 24;

        return new Time(finalHour, finalMinute, finalSecond) ;
    }

    @Override
    public String toString() {
        return String.format(format:"%02d:%02d:%02d", hour, minute, second);
    }
}
public class Main{
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.println(x:"Enter the first time: ");
        System.out.print(s:"Hours: ");
```

```java
        System.out.println(x:"Enter the first time: ");
        System.out.print(s:"Hours: ");
        int hour1 = scanner.nextInt();

        System.out.print(s:"Minutes: ");
        int minute1 = scanner.nextInt();

        System.out.print(s:"Seconds: ");
        int second1 = scanner.nextInt();

        System.out.println(x:"Enter the second time: ");
        System.out.print(s:"Hours: ");
        int hour2 = scanner.nextInt();

        System.out.print(s:"Minutes: ");
        int minute2 = scanner.nextInt();

        System.out.print(s:"Seconds: ");
        int second2 = scanner.nextInt();

        Time time2 = new Time(hour1, minute1, second1);
        Time time1 = new Time(hour2, minute2, second2);

        Time result = time1.addTime(time2);

        System.out.println("Time 1: " + time1);
        System.out.println("Time 2: " + time2);
        System.out.println("Sum of the time: " + result);

        scanner.close();
    }
}
```

```
lab 2_68c5ffa1\bin" Main "
Enter the first time:
Hours: 1
Minutes: 30
Seconds: 30
Enter the second time:
Hours: 2
Minutes: 20
Seconds: 30
Time 1: 02:20:30
Time 2: 01:30:30
Sum of the time: 03:51:00
```

3)

```java
import java.util.Scanner;

class Prof{
    int id;
    String name;
    String dept;
    int age;
    double salary;

    public Prof(int id, String name, String dept, int age, double salary){
        this.id = id;
        this.name = name;
        this.dept = dept;
        this.age = age;
        this.salary = salary;
    }
}
public class Main1{
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print(s:"Enter the number of professors: ");
        int n = scanner.nextInt();
        Prof[] professors = new Prof[n];
        for (int i = 0; i < n; i++) {
            System.out.println("Enter the details of the professor: " + (i+1) + ":");
            System.out.print(s:"ID: ");
            int id = scanner.nextInt();
            scanner.nextLine();

            System.out.println(x:"Name: ");
            String name = scanner.nextLine();

            System.out.println(x:"Department: ");
            String dept = scanner.nextLine();

            System.out.println(x:"Age: ");
            System.out.print(s:"ID: ");
            int id = scanner.nextInt();
            scanner.nextLine();

            System.out.println(x:"Name: ");
            String name = scanner.nextLine();

            System.out.println(x:"Department: ");
            String dept = scanner.nextLine();

            System.out.println(x:"Age: ");
            int age = scanner.nextInt();

            System.out.println(x:"Salary: ");
            double salary = scanner.nextDouble();
            professors[i] = new Prof(id, name, dept, age, salary);
        }
        Prof highestSalaryProf = professors[0];
        for (int i = 1; i < professors.length; i++) {
            if (professors[i].salary > highestSalaryProf.salary){
                highestSalaryProf = professors[i];
                }
            }
            System.out.println(x:"\nProfessor with the highest salary: ");
            System.out.println("ID: " + highestSalaryProf.id);
            System.out.println("Name: " + highestSalaryProf.name);
            System.out.println("Department: " + highestSalaryProf.dept);
            System.out.println("Age: " + highestSalaryProf.age);
            System.out.println("Salary: " + highestSalaryProf.salary);
            scanner.close();
        }
    }
```

```
Enter the number of professors: 2
Enter the details of the professor: 1:
ID: 123
Name:
Arivumathi
Department:
CYS
Age:
19
Salary:
200000
Enter the details of the professor: 2:
ID: 132
Name:
Jeevan
Department:
AI
Age:
23
Salary:
100000

Professor with the highest salary:
ID: 123
Name: Arivumathi
Department: CYS
Age: 19
Salary: 200000.0
```

4)

```java
import java.util.Scanner;

class Innings{
    private String battingTeam;
    private int runs;

    public String getBattingTeam(){
        return battingTeam;
    }

    public void setBattingTeam(String battingTeam){
        this.battingTeam = battingTeam;
    }

    public int getRuns(){
        return runs;
    }

    public void setRuns(int runs){
        this.runs = runs;
    }
}

public class Main2{
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        Innings[] inningsArray = new Innings[2];
        for (int i = 0; i < 2; i++) {
            inningsArray[i] = new Innings();

        System.out.println("Enter details of the Innings " + ( i + 1 ) + ":");
        System.out.print(s:"Enter the batting team: ");
        String battingTeam = scanner.nextLine();
        inningsArray[i].setBattingTeam(battingTeam);

        System.out.print(s:"Enter the runs scored: ");
```

```java
}

public class Main2{
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        Innings[] inningsArray = new Innings[2];
        for (int i = 0; i < 2; i++) {
            inningsArray[i] = new Innings();

        System.out.println("Enter details of the Innings " + ( i + 1 ) + ":");
        System.out.print(s:"Enter the batting team: ");
        String battingTeam = scanner.nextLine();
        inningsArray[i].setBattingTeam(battingTeam);

        System.out.print(s:"Enter the runs scored: ");
        int runs = scanner.nextInt();
        scanner.nextLine();
        inningsArray[i].setRuns(runs);
    }
        System.out.println(x:"\nDetails of the innings: ");
        for (int i = 0; i < 2; i++) {
            System.out.println("Innings " + (i + 1) + ":");
            System.out.println("Batting team: " + inningsArray[i].getBattingTeam());
            System.out.println("Runs scored: " + inningsArray[i].getRuns());
        }
        scanner.close();
    }
}
```

```
C:\Users\arivu\Desktop\2nd year 4th sem\Java programming\Java programming lab 2>
deDetailsInExceptionMessages -cp "C:\Users\arivu\AppData\Roaming\Code\User\works
lab 2_68c5ffa1\bin" Main2 "
Enter details of the Innings 1:
Enter the batting team: CSK
Enter the runs scored: 180
Enter details of the Innings 2:
Enter the batting team: RCB
Enter the runs scored: 140

Details of the innings:
Innings 1:
Batting team: CSK
Runs scored: 180
Innings 2:
Batting team: RCB
Runs scored: 140
```

5)

```java
import java.util.Scanner;

class Occurrence{
    public int count (String str, char ch ){
        int count = 0;
        for (int i = 0; i < str.length(); i++) {
            if (str.charAt(i) == ch){
                count ++;
            }
        }
        return count;

    }
}

public class Main3{
    Run main | Debug main | Run | Debug
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print(s:"Enter the string: ");
        String inputString = scanner.nextLine();

        System.out.print(s:"Enter a character to find its occurences: ");
        char inputChar = scanner.next().charAt(index:0);

        Occurrence occurrence = new Occurrence();

        int result = occurrence.count(inputString, inputChar);
        System.out.println("The character '" + inputChar + "' appears " + result + " Time(s) in the string.");

        scanner.close();
    }
}
```

```
C:\Users\arivu\Desktop\2nd year 4th sem\Java programming\Java programming lab 2> cmd /C
deDetailsInExceptionMessages -cp "C:\Users\arivu\AppData\Roaming\Code\User\workspaceStor
lab 2_68c5ffa1\bin" Main3 "
Enter the string: hello
Enter a character to find its occurences: l
The character 'l' appears 2 Time(s) in the string.
```