Week 2

Programming Assignment

Module: CS400INT

Q1. Koshi barrage in Sunsari district has set up the alarm system that put out warning when water level reaches 200000 cusec on barrage. Below the warning level, there is no warning. When the warning level is reached, the system puts out message, "Warning! Warning!, Evacuate Immediately". Otherwise puts out message, "Water level has not breached threshold" [Hint: use the concept of ternary operator and relational operator].

Ans-

```
public class KoshiBarrageAlarm {

public static void main(String[] args) {

        int waterLevel = 100000;

        String message = (waterLevel >= 200000)

            ? "Warning! Warning!, Evacuate Immediately"

            : "Water level has not breached threshold";



    System.out.println(message);

  }

}
```

Output:

Figure 1/AnswerNo1

Q2. Two students "Ram" and "Shyam" are studying at Itahari International College(IIC). They are from Dharan and Biratnagar respectively. Distance from Dharan to IIC is 25 KM and Distance from Biratnagar to IIC is 30 KM. Ram pays Rs 8 per KM for Bus fare while Shyam pays Rs. 10 per KM to reach college. Now, update the given Java program and solve the following task.

Ans-

```java
public class Workshop {

    public static void main(String[] args) {

        int distanceFromDharanToIIC = 25;

        int distanceFromBiratnagarToIIC = 30;

        int farePerKmFromDharan= 8;

        int farePerKmFromBiratnagar = 10;

        int diffrenceBetweenTwoDistance = distanceFromBiratnagarToIIC - distanceFromDharanToIIC;



        // question no a

        // difference between given distances

        System.out.println("the difference between given distances" + diffrenceBetweenTwoDistance);



        // question no b
```

```java
    // distance covered by them is equal

    Boolean TwoDistanceIsEqual = distanceFromBiratnagarToIIC ==
distanceFromDharanToIIC;

    System.out.println("the distance covered by them is equal " +
TwoDistanceIsEqual);



    //question no c

    // updating distance of dharan

    distanceFromDharanToIIC += 7;

    System.out.println("Update disatnce of dharan " + 7);



    // question no d

    // bus fare paid by Ram

    int totalPriceDistanceOfBiratnagar = farePerKmFromBiratnagar*
distanceFromBiratnagarToIIC ;

    System.out.println("bus fare paid by Ram" +
totalPriceDistanceOfBiratnagar );



    // question no e

    // bus fare paid by Shyam

    int totalPriceDistanceOfDharan = farePerKmFromDharan *
distanceFromDharanToIIC ;

    System.out.println("bus fare paid by Shyam" +
totalPriceDistanceOfDharan );
```

```java
    // question no f
    // the average monthly bus fare paid by Ram
    int BusFareDuringAYear = 8892;
    int TheAverageMonthlyBusFare = BusFareDuringAYear/12 ;
    System.out.println("the average monthly bus fare paid by Ram" + TheAverageMonthlyBusFare );


    // question no g&h
    // Ram and Shyam had to pay
    int PerPlatesMoMoCost = 140;
    int DiscountReceived = 45;
    int OrderOuantity = 2;
    int ShyamHadToPay = 500-(140*2 - 45);
    int PerPlateCost =  348/3;
    System.out.println("Shyam had to pay is" + PerPlateCost*1);
    System.out.println("Ram had to pay is" + PerPlateCost*1);

// question no i


  Boolean isFromDharan = true;

  Boolean isFromBiratnagar = true;
  Boolean isStudent = true;

  // For Ram

   String isRamQualifiedForDiscount = isFromDharan && isStudent ?
   "Qualified for discount" : "Not qualified";
```

```java
// For Shyam

 isFromDharan = false;

String isShyamQualifiedForDiscount = isFromDharan && isStudent ?
"Qualified for discount" : "Not qualified";

// question no j


// For Shyam

String nextDiscountSchemeForShyam = ((isFromDharan ||
isFromBiratnagar) && isStudent) ? "Shyam is qualified for discount" : "Not
qualified";

System.out.println(nextDiscountSchemeForShyam);

// For Ram

String nextDiscountSchemeForRam = ((isFromDharan ||
isFromBiratnagar) && isStudent) ? "Ram is qualified for discount" : "Not
qualified";

 System.out.println(nextDiscountSchemeForRam);

 }

}
```
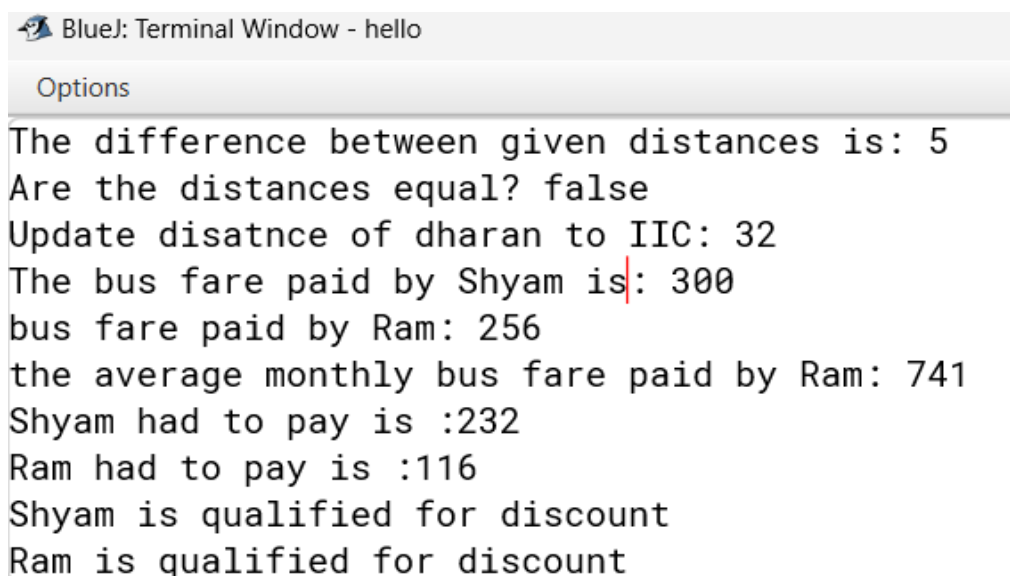
question no k

Ans-

The difference between given distances is: 5
Are the distances equal? false
Update disatnce of dharan to IIC: 32
The bus fare paid by Shyam is: 300
bus fare paid by Ram: 256
the average monthly bus fare paid by Ram: 741
Shyam had to pay is :232
Ram had to pay is :116
Shyam is qualified for discount
Ram is qualified for discount

Figure 2/Answer No K

Q3. Write the following program, run, and answer the given ques ons:

 Ans-

```java
public class PrefixAndPostFixNota onExample {
public sta c void main(String[] args) {
      int myStrength = 7;
      int myAge = 10;
     myStrength--;
     System.out.println(myStrength);
      --myStrength;
     System.out.println(myStrength);
     System.out.println(--myStrength);
     System.out.println(myStrength--);
      System.out.println(myStrength);
      myAge++;
     System.out.println(myAge);
     ++myAge;
      System.out.println(myAge);
     System.out.println(++myAge);
      System.out.println(myAge++);
     System.out.println(myAge);
     }
      }
```

(a) What is the final value of myAge and myStrength Ans The final value of myAge is 14 and myStrength is 3.

(b) What is the final value of myStrength when line number 7 is myStrength++ ?

Ans) The final value of myStrength when line number 7 is myStrength++ is 7.

c) Change the value of myAge to 17 and myStrength to 20 then find the value of each variable.

Ans) The value of myAge variable when myAge is changed to 17 will be 21 and when myStrength is changed to 20 will be 16.