Assignment - 3

Q1. write a java program to input the height of the person and check if the height of the person is greater than or equal to 6 feet then print the message "The person is tall".

Ans.
```
import java.util.Scanner;
public class A3Q01 {
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        int h;
        System.out.println("Enter the height of the
                                    person");
        h = sc.nextInt();
        if (h >=6)
        System.out.println("The person is tall");
        sc.close();
    }
}
```

Output :-

```
Enter the height of the person
7
The person is tall
```

Q2. write a java program to input the mark of a students and check if the student mark is greater than or equal to 40, then it generates the following message: "Congratulation! You have passed the exam".
Otherwise the output message is
"Sorry! You have failed the exam"

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Ans.
```
public class A3Q02 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int mark;
        System.out.println("enter the mark
                of the student");
        mark = sc.nextInt();
        if (mark >= 40)
        System.out.println("Congratulations! You
            have passed the exam");
        else
        System.out.println("Sorry! You have failed
                the exam");
        sc.close();
    }
}
```

Output:-

```
enter the mark of the student
98
Congratulations! You have passed the
    exam.
```

Q3. Input an integer through the keyboard. write a java program to find out whether it is an odd number or even number.

Ans.
```
import java.util.Scanner;
public class A3Q03{
        public static void main(String[] args){
```

```
        Scanner sc = new Scanner (System.in);
        int n;
        System.out.println("Enter a number");
        n = sc.nextInt();
        if (n % 2 == 0)
        System.out.println("Even number");
        else
        System.out.println("odd number");
        sc.close();
    }
}
```

Output : Enter a number
45
Odd number

Q4. Any character is entered through the keyboard, write a java program to determine whether the character entered is a capital letter, a small case letter, a digit or a special symbol. The following table shows the range of ASCII values for various character.

Characters	ASCII values
A - Z	65 - 90
a - z	97 - 122
0 - 9	48 - 57
Special Symbol	0 - 47, 58 - 64, 91 - 96, 123 - 127

Ans:
```
import java.util.Scanner;
public class A3Q04{
    public static void main(String[] args){
      char c;
      Scanner sc= new Scanner(System.in);
      System.out.println("Enter a character");
      c = sc.next().charAt(0);
      if(c>=65 && c<=90)
     System.out.println("The entered character is an uppercase");
     else if (c>=97 && c<=122)
     System.out.println("The entered character is an lowercase");
      else if (c>=48 && c<=57)
     System.out.println("it is a digital");
     else if ((c>=0 && c<=47) || (c>=58 && c<=64) ||
          (c>91 && c<=96) || (c>=123 &&
                c<=127))
     System.out.println("It is a spicial character");
     else System.out.println("Invalid Input");
     sc.close();
    }
}
```

output: Enter a character
m
The entered character is a lowercase

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Ans 5.

```
uniport java.util.Scanner;
public class A3Q5 {
    public static void main(String[]args){
        Scanner sc = new Scanner(System.in);
        System.out.println("enter a,b,c:");
        double a = sc.nextDouble();
        double b = sc.nextDouble();
        double c = sc.nextDouble();
        double discriment = Math.pow(b,2)-2*a*c;
        System.out.println("The eqn has");
        if (discrimenant >0) {
    double root1 =(-b+Math.pow(discrimenate,0.5))
                                    /(2*a);
    double root2=(-b- math.pow(discrimenate,0.5))
                                    /(2*a);
    System.out.println("two roots "+root1+
            "and "+root2);
        } else if (
            discrimeinate ==0) {
    double root1 =(-b+Math.pow(discrenant,0.5))
                                    /(2*a);
    System.out.println("one root"+root);
    } else
    System.out.println("no real roots")
    sc.close();
    }
}
```

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Output:

Enter a, b, c : 1 2 1
The eqn has one root -1.0

Ans6.

```
import java.util.Scanner;
public class A3Q6 {
    public static void main (String []args){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a, b, c, d, e, f:");
        double a = sc.nextDouble();
        double b = sc.nextDouble();
        double c = sc.nextDouble();
        double d = sc.nextDouble();
        double e = sc.nextDouble();
        double f = sc.nextDouble();
        if (a*d-b*c==0)
        System.out.println("The eqn has no solution.");
        else {
        double x = (e*d - b*f)/(a*d-b*c);
        double y = (a*f-e*c)/(a*d-b*c);
        System.out.println("x is" + x + "and y is "+y);
        sc.close();
        }
    }
}
```

Output: Enter a, b, c, d, e, f: 9 4 3 -5 -6 -21
x is -2.0 and y is 3.0

Ans 7.

```
import java.util.Scanner;
public class A3Q07 {
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        double x, y;
        System.out.print("Enter the x and y coordinate
                          respectively : ");
        x = sc.nextDouble();
        y = sc.nextDouble();
        if (x==0)
        System.out.print("("+x+","+y+") is on the y axis");
        else if (y==0)
        System.out.print("("+x+","+y+") is on the x axis");
        else if (x>0 && y>0)
        System.out.print("("+x+","+y+") is on the first q");
        else if(x<0 && y>0)
        System.out.println("("+x+","+y+") is on the second
                            quadrant");
        else if(x<0 && y<0)
        System.out.println("("+x+","+y+") is on the third
                            quadrant");
        else
        System.out.println("("+x+","+y+") is at center");
        sc.close()
    }
}
```

output: Enter the x and y coordinate respectively :-1,-2.2
(-1.0,-2.5) is on the third quadrant.

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Ans. import java.util.scanner;
public class A3Q08{
public static void main(string [] args){
Scanner sc = new Scanner(System.in);
int rahul, ayush, ajay;
System.out.println("Enter the ages of Rahul, Ayush, Ajay respectively");
rahul = sc.nextInt();
ayush = sc.nextInt();
ajay = sc.nextInt();
if(rahul > ayush && rahul > ajay)
System.out.println("Rahul is the eldest among them");
else if (ayush > rahul && ayush > ajay)
System.out.println("Ayush is the eldest among them");
else
System.out.println("Ajay is the eldest among them");
sc.close();
}
}

Output: Enter the ages of Rahul, Ayush, Ajay respectively
23 45 20
Ayush is the eldest among them.

Ans. Public class A3Q09
public static void main(string [] args){
int month = (int)(Math.random()*12)+1;
Switch(month)
Case 1 : System.out.println("January"); break;

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```
Case 2: System.out.println("February"); break;
Case 3: System.out.println("March"); break;
Case 4: System.out.println("April"); break;
case 5: System.out.println("May"); break;
case 6: System.out.println("June"); break;
Case 7: System.out.println("July"); break;
case 8: System.out.println("August"); break;
Case 9: System.out.println("September"); break;
Case 10: System.out.println("October"); break;
Case 11: System.out.println("November"); break;
Case 12: System.out.println("December");
    }
  }
```

Output: June

Ans 10.

```
import java.util.Scanner;
public class A3Q10{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter today's day: ");
        int tday = sc.nextInt();
        System.out.print("Enter the number of days elapsed
            since today: ");
        int daysElapsed = sc.nextInt();
        int futureday = (tday + daysElapsed)%7;
        System.out.print("Today is");
        switch(tday){
```

```
        case 0 : System.out.print("Sunday"); break;
        case 1 : System.out.print("Monday"); break;
        case 2 : System.out.print("Tuesday"); break;
        case 3 : System.out.print("Wednesday"); break;
        case 4 : System.out.print("Thursday"); break;
        case 5 : System.out.print("Friday"); break;
        case 6 : System.out.print("Saturday");
        }
        System.out.print("and the future day is");
        switch(futureday) {
        case 0: System.out.println("Sunday"); break;
        case 1 : System.out.println("Monday"); break;
        case 2 : System.out.println("Tuesday"); break;
        case 3 : System.out.println("Wednesday"); break;
        case 4 : System.out.println("Thursday"); break;
        case 5 : System.out.println("Friday"); break;
        case 6 : System.out.println("Saturday"); break;
        sc.close();
        }
    }
}
```

Output: Enter today's day: 1
Enter the number of days elapsed since today: 3
Today is Monday and the future day is Thurs

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Ans 11.
```
import java.util.scanner;
public class A3Q11{
    public static void main (String[]args){
        Scanner SC = new Scanner (System.in){
        System.out.print(" enter the weight of a
                person in Kg and height in meter :");
        double wt = SC.nextDouble();
        double ht = SC.nextDouble();
        double BMI = wt/(ht * ht);
        System.out.println("under weight");
        else if (BMI >=18.5 && BMI < 25)
        System.out println("Normal weight");
        else if (BMI >= 25 && BMI < 30)
        System.out.println("Over weight");
         else
        System.out.println("obese");
        SC.close();
```

Output:

enter the weight of a person in Kg and height in meter : 60 1.6

BMI = 23.437499999

Normal weight.

Ans 12:
```
import java.util.scanner;
public class A3Q12 {
    public static void main (String[] args){
        int n1, n2, n3;
```

```
Scanner sc = new Scanner(System.in);
System.out.print("Enter three integers: ");
    n1 = sc.nextInt();
    n2 = sc.nextInt();
    n3 = sc.nextInt();
    int temp;
if((n2<n1) || (n3<n1));{
    if (n2<n1){
            temp = n1;
        n1 = n2;
        n2 = temp;
    }
    if (n3<n1){
            temp = n1;
        n3 = n3;
        n3 = temp;
    }
    if (n3<n2){
            temp = n2;
        n2 = n3;
        n3 = temp;
    }
}
System.out.println("Integers in non-
        decreasing order: "+n1+" "
                +n2+"
        "+n3);

sc.close();
}
}
```

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```
Ques 13.  import java.util.Scanner;
          public class Q13 {
              public static void main(String[] args) {
                  Scanner sc = new Scanner(System.in);
                  System.out.print("Enter the month as integer ");
                  int month = sc.nextInt();
                  System.out.print("Enter the year as integer ");
                  int year = sc.nextInt();
                  boolean leapyear = (year % 4 == 0 && year % 100 != 0) ||
                          (year % 400 == 0);
                  switch (month) {
                  case 1: System.out.println(
                  "January " + year + " had 31 days"); break;
                  case 2: System.out.println("February " + year + " had " +
                  ((leapyear) ? "29 days" : "28 days")); break;
                  case 3: System.out.println(
                  "March " + year + " had 31 days"); break;
                  case 4: System.out.println(
                  "April " + year + " had 30 days"); break;
                  case 5: System.out.println(
                  "May " + year + " had 31 days"); break;
                  case 6: System.out.println(
                  "June " + year + " had 30 days"); break;
                  case 7: System.out.println(
                  "July " + year + " had 31 days"); break;
                  case 8: System.out.println(
                  "August " + year + " had 31 days"); break;
                  case 9: System.out.println(
                  "September " + year + " had 30 days"); break;
```

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```
        case 10 : System.out.println(
"October" + year + " had 31 days"); break;
        case 11: System.out.println(
"November" + year + " had 30 days"); break;
        case 12: System.out.println(
"December" + year + " had 31 days");
        sc.close();
    }
  }
}
```

Output :- Enter the month as integer: 2
Enter the year as integer : 2020
February 2020 has 29 days.

Ans 14.

```
import java.util.Scanner;
public class A3Q14 {
    public static void main (String [] args) {
    Scanner sc = new Scanner(System.in);
    int user = sc.nextInt();
    System.out.print("The Computer is");
    Switch (computer) {
    Case 0 : System.out.print("scissor."); break
    Case 1 : System.out.print("rock"); break
    Case 2 : System.out.print("paper");
    }
    System.out.print("You are");
    Switch (user) {
    Case 0 : System.out.print("scissor"); break;
```

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```
case 1 : System.out.print("rock"); break;
case 2 : System.out.print("paper");
} if (
    computer == user)
System.out.println("Too. It is a draw");
  else if (
(user == 0 && computer == 2) || (user == 1 && computer == 0)
                                  ||
  { System.out.println(" : You won"); }
  else
   System.out.print(". You lose");
    sc.close();
     }
}
```

Ans 15

```
import java.util.Scanner;
public class A3Q15 {
  public static void main (String[] args) {
    Scanner sc = new Scanner(System.in);
    System.out.print("Enter a point with two
                      coordinates: ");
    double x = sc.nextDouble();
    double y = sc.nextDouble();
    double distance = Math.pow(Math.pow(x,2) +
                      Math.pow(y,2),0.5);
    if (distance <=10)
          System.out.println("Point lies in
                              the circle");
    else
          System.out.println("Point does
    not lie in the circle");
      sc.close();
  }
}
```

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