NAME - SHUBHAM KUMAR

Introduction to Java 1 Exercise

1. Write a class with FirstName, LastName & age field. Print Firstname, LastName & age using static block, static method & static variable respectively.

que1.java

```java
package Que1;

public class que1 {
    static String firstName = "Shubham";
    static String lastName = "Kumar";
    static int age = 24;
    private static void print(){
        System.out.println("In static method");
        System.out.println("Shubham Kumar 24");
    }
    static {
        System.out.println("In static block");
        System.out.println("Shubham Kumar 24");
    }

    public static void main(String[] args) {
        System.out.println("In main");
        System.out.println(firstName + " " + lastName + " " + age);
        print();
    }
}

```

Output:

Console

```
<terminated> que1 [Java Application] /usr/eclipse/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.linux.
In static block
Shubham Kumar 24
In main
Shubham Kumar 24
In static method
Shubham Kumar 24
```

2. Write a program to read user input until user writes XDONE and then show the entered text by the user on command line

```java
package Que2;

import java.util.Scanner;

public class que2 {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        String a = "";
        StringBuilder str = new StringBuilder();
        while(true) {
            a = sc.next();
            if(a.equals("XDONE"))
                break;
            else {
                str.append(a+" ");
            }
        }
        System.out.print(str);
    }

}
```

Output

```
<terminated> que2 [Java Application] /usr/eclipse/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.linux.x
Hello
World!
XDONE
Hello World!
```

3. Write a java program to show following menu to the user:

*******Menu******

1. Calculate Area of Circle
2. Calculate Circumference of a Circle
3. Exit.

Choose an option (1-3):

Take radius as user input.

Hint: Use Switch statement to act on the menu. Also area and circumference methods should be static

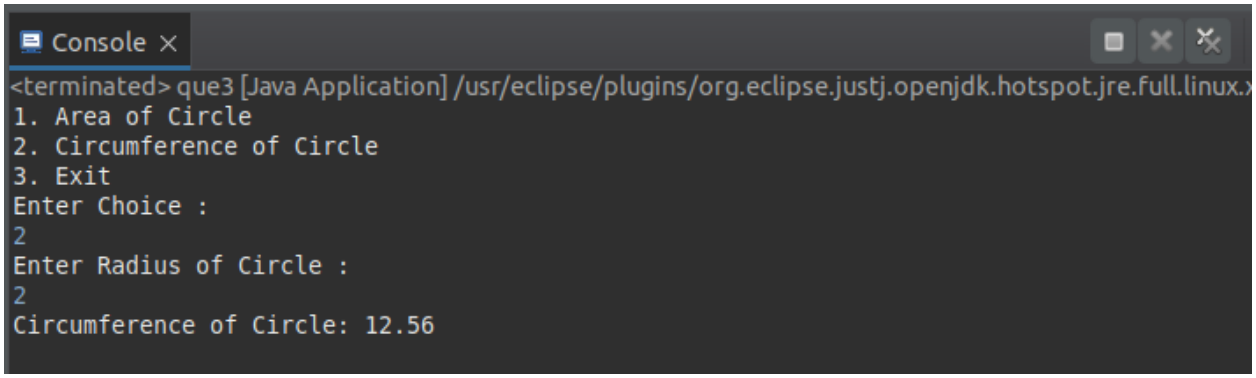
que3.java

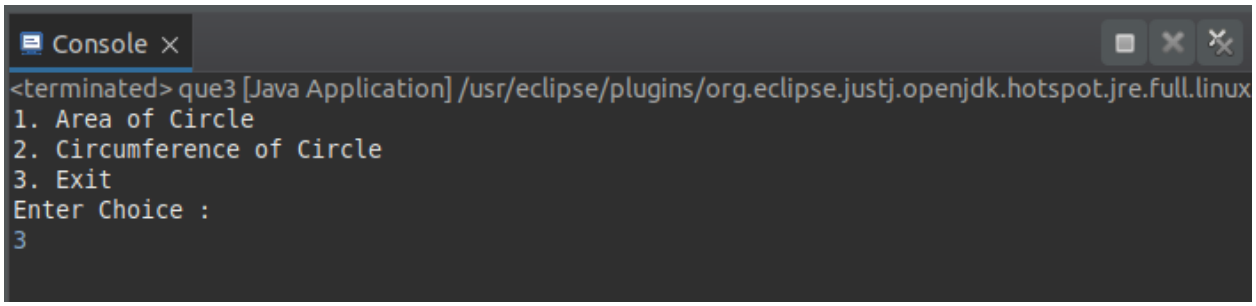
```java
package Que3;
import java.util.*;
public class que3 {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.println("1. Area of Circle\n2. Circumference of Circle\n3. Exit");
        System.out.println("Enter Choice : ");
        int choice = sc.nextInt();
        float r;
        switch(choice) {
            case 1:
                System.out.println("Enter Radius of Circle : ");
                r = sc.nextFloat();
                area(r);
                break;
            case 2:
                System.out.println("Enter Radius of Circle : ");
                r = sc.nextFloat();
                circumference(r);
                break;
            case 3:
                System.exit(0);
                break;
        }
    }
    static void area(float r) {
        float c = (float) (3.14*r*r);
        System.out.println("Area of Circle: " +c);
    }
    static void circumference(float r) {
        float c = (float) (2*3.14*r);
        System.out.println("Circumference of Circle: " +c);
    }

}

```

Output

Console

```
<terminated> que3 [Java Application] /usr/eclipse/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.linux.x
1. Area of Circle
2. Circumference of Circle
3. Exit
Enter Choice :
1
Enter Radius of Circle :
2
Area of Circle: 12.56
```





4. Create a two dimensional array of integers and display:
    a. sum of all elements of each column
    b. sum of all elements of each row

question4.java

```
1  package Que4;
2  import java.util.Scanner;
3  public class question4 {
4      static int r;
5      static int c;
6      //Sum Column Method
7      static void column_sum(int arr[][]) {
8
9          for(int i = 0; i<c; i++) {
10             int col_sum=0;
11             int x = i;
12             for(int j = 0; j<r; j++) {
13                 col_sum += arr[j][i];
14             }
15             x++;
16             System.out.println("Sum of "+x+" Column : " +col_sum);
17         }
18     }
19
20     //Sum Row Method
21     static void row_sum(int arr[][]) {
22         for(int i = 0; i<r; i++) {
23             int row_sum=0;
24             int y=i;
25             for(int j = 0; j<c; j++) {
26                 row_sum += arr[i][j];
27             }
28             y++;
29             System.out.println("Sum of "+y+" Row :" +row_sum);
30         }
31     }
```

```java
    public static void main(String[] args)
    {
            Scanner sc = new Scanner(System.in);
            int i, j;
            try {
                System.out.println("Enter Row Size : ");
                r = sc.nextInt();
                System.out.println("Enter Column Size : ");
                c = sc.nextInt();
            } catch (Exception e) {
                // TODO Auto-generated catch block
                e.printStackTrace();
            }

            int[][] arr = new int[r][c];
            // Get the matrix elements
            int x = 1;

            //Array Initialization
            System.out.println("Enter Array Value : ");
            for (i = 0; i < r; i++) {
                for (j = 0; j < c; j++) {
                    int a = sc.nextInt();
                    arr[i][j] = a;
                }
            }

            System.out.println("Array");
```

```java

            //Array
            for(i = 0; i<r ;i++) {
                for(j = 0; j < c; j++) {
                    System.out.print(arr[i][j]+" ");
                }
                System.out.println();
            }
            column_sum(arr);
            row_sum(arr);

        }

}

```

Output

```
Console ×
<terminated> question4 [Java Application] /usr/eclipse/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.l
Enter Row Size :
2
Enter Column Size :
2
Enter Array Value :
1
2
3
4
Array
1 2
3 4
Sum of 1 Column : 4
Sum of 2 Column : 6
Sum of 1 Row :3
Sum of 2 Row :7
```

5. Create a class named Employee with fields firstname,lastname,age and designation.

   The class should:

   a. have all types of constructors to initialize the object
   b. class should also have setter methods to update a particular field
   c. Override its toString method to display a meaningful message using all these fields.

que5.java

```java
package Que5;
class employee{
    private String firstName, lastName, designation;
    private int age;
    //Default Constructor
    public employee() {
    }

    //Parameterized Constructor
    public employee(String fname, String lname, int ag, String designat) {
        this.firstName=fname;
        this.lastName=lname;
        this.age=ag;
        this.designation = designat;
    }

    //Copy Constructor
    public employee(employee emp) {
        this.firstName = emp.firstName;
        this.lastName = emp.lastName;
        this.age = emp.age;
        this.designation = emp.designation;
    }

    //Getter
    public String getFirstName()
    {
        return firstName;
    }
```

```java
    public String getLastName()
    {
        return lastName;
    }
    public int getAge()
    {
        return age;
    }
    public String getDesignation() {
        return designation;
    }

    //Setter
    public void setFirstName(String fName)
    {
        firstName = fName;
    }
    public void setLastName (String lName)
    {
        lastName = lName;
    }
    public void setAge(int ag) {
        age = ag;
    }
    public void setDesignation(String design) {
        designation = design;
    }

```

```
    public String toString()
    {
        return firstName + " " + lastName + " " + age+" "+designation;
    }
}
public class que5 {
    public static void main(String args[]) {
        employee emp = new employee();
        System.out.println(emp.toString());
        emp = new employee("Shubham","Kumar",24,"SE");
        System.out.println(emp.toString());
        employee emp1 = new employee(emp);
        System.out.println(emp1.toString());
    }

}

```

Output: