Assignment -4

Q-a) Write a program that calculates the area and perimeter of the circle. And find the Coverage & Test Cases of that program using JaButi Tool.

```java
Import java.util.Scanner;

Public class Main
{
        public static void Main (String[] args)
        {
                Scanner io = new scanner (System.in);

                System.out.print/n("Input the radius of the circle");

                double radius = io.next Double();

                system.out.print/n("Perimeter is=" + (2*radius*Math.PI));

                system.out.print/n("Area is=" + (Math.PI*radius*radius));

        }
}
```

Q-b) Write a program which read the first name and last name from console and matching with expected result by using JaBuTi.

```
import textio.TextIO;
public class FirstNameLastName
{
    public static void main(String[] args)
    {
        String input;
        int space;
        String firstName;
        String lastName;
        System.out.print/n();
        System.out.println("Please enter your first name and last name, separated by a space.");
        System.out.print("?");
        input = TextIO.get/n();
        space = input.indexOf(' ');
        firstName = input.substring(0, space);
        lastName = input.substring(space+1);
        System.out.print/n("Your first name is " + firstName + ", which has "
                    + firstName.length() + " characters.");
        System.out.print/n("Your last name is " + lastName + ", which has "
                    + lastName.length() + " characters.");
        System.out.print/n("Your initials are " + firstName.charAt(0) + lastName.charAt(0));
    }
}
```

Q-c) Write a program that takes three double numbers from the java console representing , respectively, the three coefficients a, b, and c of a quadratic equation.

```java
import java.util.Scanner;

public class QuadraticEquation

{

public static void main(String[] args)

{

Scanner input = new Scanner(System.in);

System.out.print("Enter the value of a: ");

double a = input.nextDouble();

System.out.print("Enter the value of b: ");

double b = input.nextDouble();

System.out.print("Enter the value of c: ");

double c = input.nextDouble();

double d= b * b - 4.0 * a * c;

if (d> 0.0)

{

double r1 = (-b + Math.pow(d, 0.5)) / (2.0 * a);

double r2 = (-b - Math.pow(d, 0.5)) / (2.0 * a);

System.out.print/n("The roots are " + r1 + " and " + r2);

}

else if (d == 0.0)

{

double r1 = -b / (2.0 * a);

System.out.print/n("The root is " + r1);

}  else

{

System.out.print/n("Roots are not real.");

}

}

}
```

Q-d) Write a program that reads commercial website URL from a URL from file

.you should expect that the URL starts with www and ends with .com. retrieve the name of the site and output it. For instance, if the user inputs www.yahoo.com, you should output yahoo. After that find the test cases and coverage using JaButi.

```java
package com.javatpoint;

import java.net*;

public class URL

{

        public static void main(String[] Strings)

        {

                try

                        {

                        URL = new URL(https://www.google.com/inputtools);

                        System.out.print/n("Protocol:" + url.getProtocol());

                        System.out.print/n("HostName:" + url.getHost());

                        System.out.print/n("Port Number:" + url.getPort());

                        System.out.print/n("File Name:" + url.getFile());

                        }

                        catch( Exception e)

                            {

                                    System.out.print/n(e):

                            }

        }

}
```

Q-e) Write a program for a calculator and find the test case and coverage and Def-use-graph.

```java
import java.util.Scanner;

public class Calculator {

  public static void main(String[] args) {

    double num1;

    double num2;

    double ans;

    char op;

    Scanner reader = new Scanner(System.in);

    System.out.print("Enter two numbers: ");

    num1 = reader.nextDouble();

    num2 = reader.nextDouble();

    System.out.print("/nEnter an operator (+, -, *, /): ");

    op = reader.next().charAt(0);

    switch(op) {

      case '+': ans = num1 + num2;

        break;

      case '-': ans = num1 - num2;

        break;

      case '*': ans = num1 * num2;

        break;

      case '/': ans = num1 / num2;

        break;

    default: System.out.printf("Error! Enter correct operator");

      return;     }

    System.out.print("/nThe result is given as follows:/n");

    System.out.printf(num1 + " " + op + " " + num2 + " = " + ans);

  }

}
```

Q-f) Write a program that reads two words representing passwords from the java console and outputs the number of characters in the smaller of the two. For example, if the words are open and sesame, then the output should be 4, the length of the shorter word, open. And test this program using JaButi.

```java
import java.util.Scanner;

public class Password

{

        public static void main(String[] args)

        {

                Scanner scan = new Scanner (System.in);

                System.out.print("Enter your First Password=");

                string passone = scan.next();

                system.out.print("Enter your Second Password=");

                string passtwo = scan.next();

            system.out.print("Your password is" + passone + "your other password is" +  passtwo);

        }

}
```