

Date :- 29 September 2020

Name :- Hrilik Singh, USN :- 1BM19CS063

OOJ Lab Exercise - 1 :-

Q 1. Develop a Java Program that prints all real solutions to the quadratic equations $ax^2 + bx + c = 0$. Read in a, b, c and use the quadratic formula. If the discriminate $b^2 - 4ac$ is negative, display a message stating that there are no real solutions.

Ans. Input :-

```
import java.util.*;
```

```
class quadratic root {
```

```
    public static void main (String args[])
```

```
    {
```

```
        double a, b, c, d;
```

```
        double root 1, root 2;
```

```
        Scanner scr = new Scanner (System.in);
```

```
        System.out.println ("Enter the value of a, b, c :");
```

```
        a = scr.nextDouble();
```

```
        b = scr.nextDouble();
```

```
        c = scr.nextDouble();
```

```
        d = (b * b) - (4 * a * c);
```

```
        if (d > 0)
```

```
        {
```

```
            root 1 = (-b + Math.sqrt(d)) / (2 * a);
```

```
            root 2 = (-b - Math.sqrt(d)) / (2 * a);
```

```
            System.out.println ("Roots are positive but unequal  
1st Root = " + root 1 + " and  
2nd root = " + root 2);
```

```
        }
```

```
    }  
    else if (d == 0)
```

```
    {
```

Date :: 29 September 2020 Name :: Shrik Singh , USN :: 1BM19CS063

root 1 = $(-b + \text{Math.sqrt}(d)) / (2 * a)$;

System.out.println("Roots are positive and equal , 1st Root = " + root1 +
= 2nd Root ") ;

}

else

{

System.out.println("There are no real solutions. ");

}

}

}

Output of the above code :-

Enter the values of a, b, c :

1

2

-3

Roots are positive but unequal , 1st Root = 1.0 and
2nd root = -3.0 .