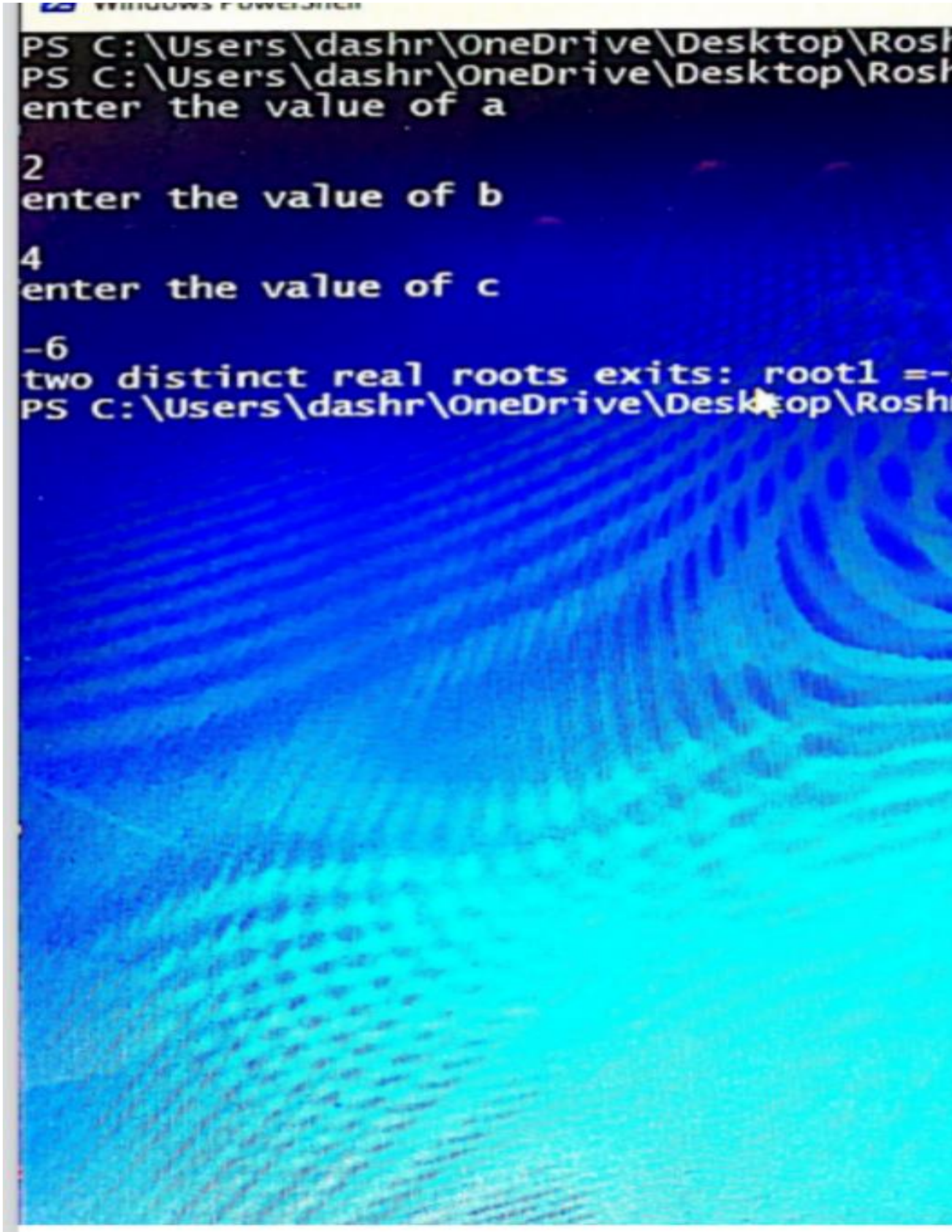
LAB-1

```
import java.util.*;
public class Quadratic {
public static void main(String[] args)
{
double a, b, c;
double root1, root2;
System.out.println("Enter values");
Scanner input = new Scanner (System.in);
a = input.nextDouble();
b = input.nextDouble();
c = input.nextDouble();
double determinant = b * b - 4 * a * c;
// condition for real and different roots
if(determinant > 0)
{
root1 = (-b + Math.sqrt(determinant)) / (2 *
a);
root2 = (-b - Math.sqrt(determinant)) / (2 *
a);
System.out.println("Real and Different
roots");
```

```
System.out.println("root1 and root2 ="+" "
+ root1 + " " + root2);
}
// Condition for real and equal roots
else if(determinant == 0)
{
root1 = root2 = -b / (2 * a);
System.out.println("Real and Equal
roots");
System.out.println("root1 = root2 = " +" "+
root1);
}
// If roots are not real
else
{
double realPart = -b / (2 *a);
double imaginaryPart = Math.sqrt(-
determinant) / (2 * a);
System.out.println("There are no real
solutions");
System.out.println("real part = "+"
"+realPart+" "+"and imaginary part ="+"
"+imaginaryPart);
}
}
```


PS C:\Users\dashr\OneDrive\Desktop\Rosh
PS C:\Users\dashr\OneDrive\Desktop\Rosh
enter the value of a
2
enter the value of b
4
enter the value of c
-6
two distinct real roots exits: root1 =-
PS C:\Users\dashr\OneDrive\Desktop\Roshn