Credit Name: CSE 2140 2nd Language Programming
Assignment Name: Quadratic Equation Mastery Project

How has your program changed from planning to coding to now? Please explain?

- Initially, I planned to create a program that accepts values for a, b, and c, calculates the discriminant, and outputs the roots of the quadratic equation. The main focus was ensuring the program handled different types of roots (x>0, x=0, x<0)
- While coding, I used basic structures with Scanner for input and if-else statements to check the discriminant. I used the quadratic formula and Math.pow() to calculate the roots and output them depending on the value of the discriminant.

```
double result = b * b - 4.0 * a * c;
if (result > 0.0) {
    double r1 = (-b + Math.pow(result, 0.5)) / (2.0 * a);
    double r2 = (-b - Math.pow(result, 0.5)) / (2.0 * a);
    System.out.println("The roots are " + r1 + " and " + r2);
} else if (result == 0.0) {
    double r1 = -b / (2.0 * a);
    System.out.println("The root is " + r1);
} else {
    System.out.println("The equation has no real roots.");
}
```

- The program now correctly handles inputs with two real roots, one real root, or no real roots.