1. 2.1.1 Quadratic Equations

   Algorithm

   1.Start

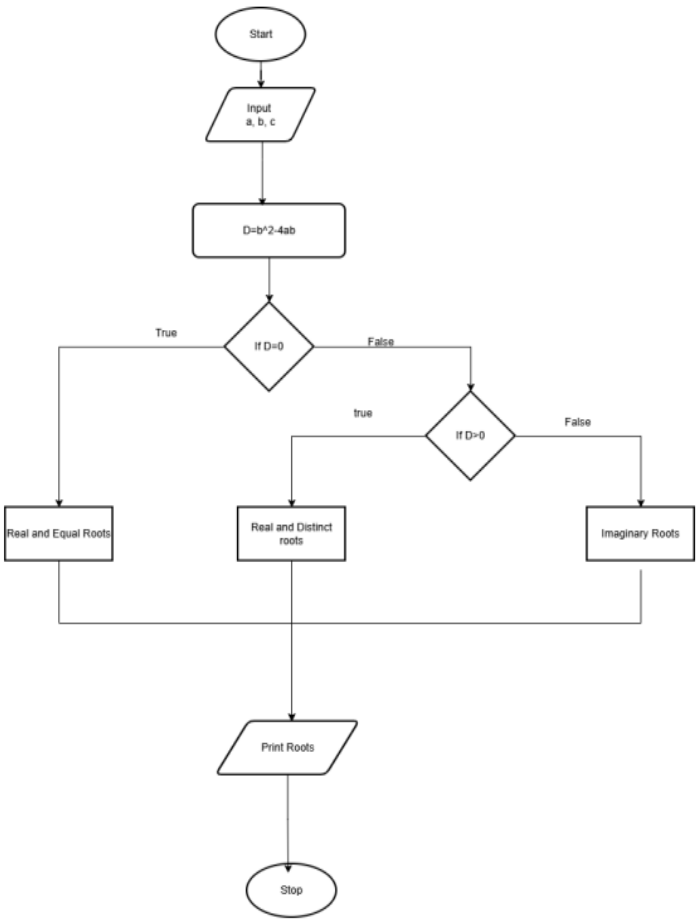
   2.Read the values of a, b, and c.

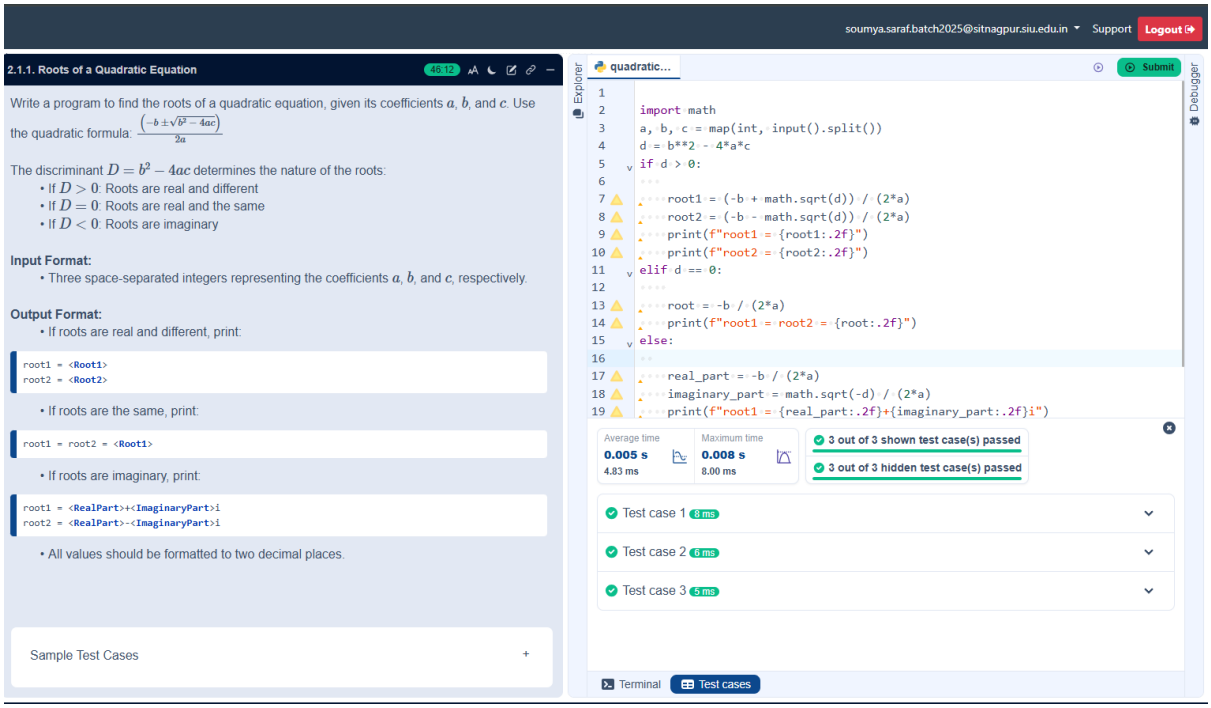
   3.Calculate the discriminant D = $b^2 - 4ac$.

   4.If D > 0, find and print two different real roots.

   5.If D = 0, find and print the equal roots.

   6.If D < 0, find and print the complex roots using real and imaginary parts.

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2.1.1. Roots of a Quadratic Equation
46:12
Write a program to find the roots of a quadratic equation, given its coefficients a, b, and c. Use the quadratic formula: $\frac{\left(-b \pm \sqrt{b^2 - 4ac}\right)}{2a}$
The discriminant $D = b^2 - 4ac$ determines the nature of the roots:
• If $D > 0$: Roots are real and different
• If $D = 0$: Roots are real and the same
• If $D < 0$: Roots are imaginary
Input Format:
• Three space-separated integers representing the coefficients a, b, and c, respectively.
Output Format:
• If roots are real and different, print:
root1 = <Root1>
root2 = <Root2>
• If roots are the same, print:
root1 = root2 = <Root1>
• If roots are imaginary, print:
root1 = <RealPart>+<ImaginaryPart>i
root2 = <RealPart>-<ImaginaryPart>i
• All values should be formatted to two decimal places.
Sample Test Cases
Explorer
quadratic...
Submit
Debugger
import math
a, b, c = map(int, input().split())
d = b**2 - 4*a*c
if d > 0:
root1 = (-b + math.sqrt(d)) / (2*a)
root2 = (-b - math.sqrt(d)) / (2*a)
print(f"root1 = {root1:.2f}")
print(f"root2 = {root2:.2f}")
elif d == 0:
root = -b / (2*a)
print(f"root1 = root2 = {root:.2f}")
else:
real_part = -b / (2*a)
imaginary_part = math.sqrt(-d) / (2*a)
print(f"root1 = {real_part:.2f}+{imaginary_part:.2f}i")
Average time
0.005 s
4.83 ms
Maximum time
0.008 s
8.00 ms
3 out of 3 shown test case(s) passed
3 out of 3 hidden test case(s) passed
Test case 1 8 ms
Test case 2 6 ms
Test case 3 5 ms
Terminal
Test cases