EXPERIMENT - 2

Name : Kanhaiya Tyagi PRN : 25070521157

2.1.1 Roots of Quadratic Equation

ALGORITHM

Step 1 :-Start

Step 2 :- Import the math library.

Step 3 :- Read three integers a, b, and c (coefficients of the quadratic equation).

Step 4 :-Calculate the discriminant

$D = b^2 - 4ac$

Step 5 :- If D > 0:

Calculate two real and different roots using:

$\frac{-b+\sqrt{D}}{2a}, \frac{-b-\sqrt{D}}{2a}$

Print both roots up to 2 decimal places.

Step 6 :- Else if D == 0:

Calculate the single repeated root:

$$\frac{-b}{2a}$$

Print the root twice up to 2 decimal places.

Step 7 :- Else (D < 0):

Calculate real part:

$$\frac{-b}{2a}$$

Calculate imaginary part:

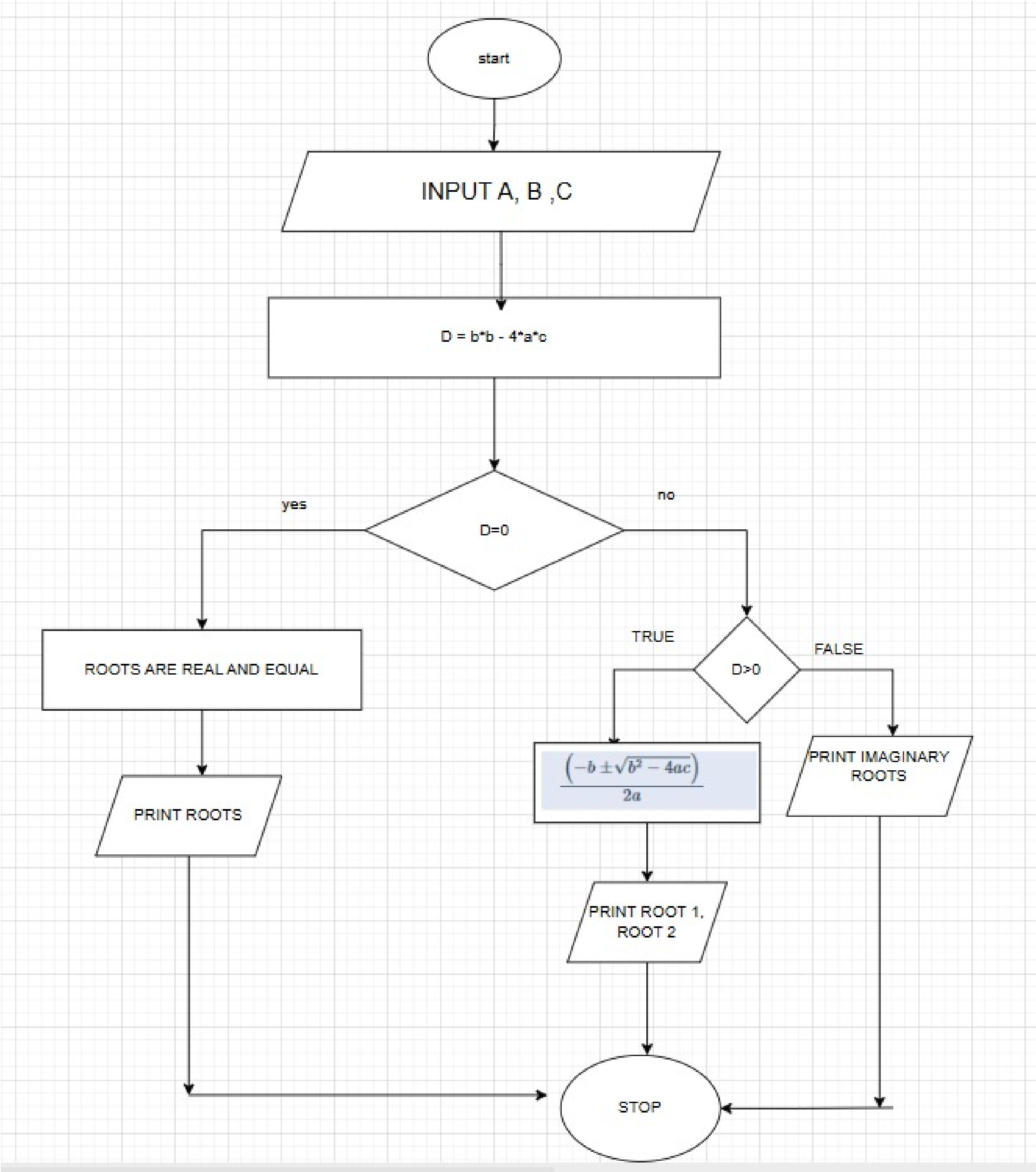
$$\frac{\sqrt{-D}}{2a}$$

Print both complex roots up to 2 decimal places.

Step 8 :- Stop

FLOWCHART

EXPERIMENT - 2



PHYTHON CODE

import math

a, b, c = map(int, input().split())

D = b*b - 4*a*c

EXPERIMENT - 2

```
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 = (-b) / (2*a)
    imag = math.sqrt(-D) / (2*a)
    print(f"root1 = {real:.2f}+{imag:.2f}i")
    print(f"root2 = {real:.2f}-{imag:.2f}i")
```

EXCECUTION