

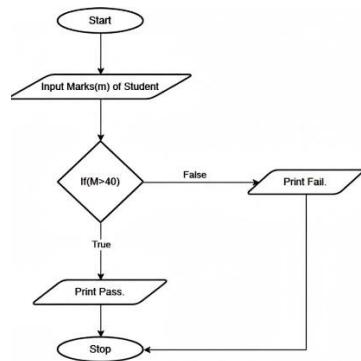
### Problem Statement:-

Write a Python program to determine whether a student passed the exam or not based on their marks.

### Algorithm:-

1. Start.
2. Read the marks obtained by the student.
3. If marks > 40 → Display “Pass”.
4. Else → Display “Fail”.
5. Stop.

### Flowchart:-



### Execution:-

The screenshot shows the CodeTantra IDE interface with the following details:

- Title:** CODETANTRA Home
- Section:** 1.1.5. Student Pass or Fail Status
- Description:** Write a Python program to determine whether a student passed the exam or not based on their marks.
- Pass/Fail Criteria:**
  - A student passes if marks ≥ 40
  - A student fails if marks < 40
- Input Format:**
  - Single line contains an integer representing the marks obtained by the student.
- Output Format:**
  - Print “Pass” if the student passed the exam.
  - Print “Fail” if the student failed the exam.
- Code:**

```

passOrFail...
1 m=int(input())
2 ,if(m >=40):
3 ,   print("Pass")
4 v else:
5   print("Fail")
```
- User Session:** rajit.kanhere.batch2025@vlnagpur-skiedu.in
- Buttons:** Support, Logout

## Experiment 02:-

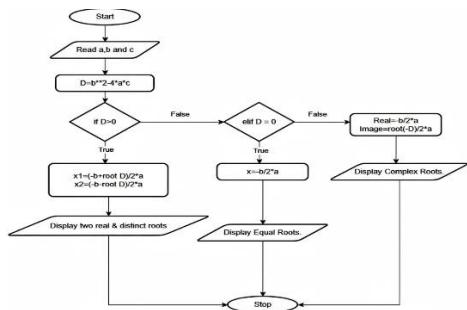
### **Problem Statement:-**

Write a program to find the roots of a quadratic equation, given its coefficients a, b, and c. Use the quadratic formula:  $(-b \pm \sqrt{b^2 - 4ac}) / 2a$ .

### **Algorithm:-**

1. Start.
2. Read the coefficients a, b, and c.
3. Calculate the discriminant using:  $D = b^2 - 4ac$ .
4. If  $D > 0$  Compute:  $x_1 = (-b + \sqrt{D}) / 2a$  and  $x_2 = (-b - \sqrt{D}) / 2a$  Display two real and distinct roots.
5. Else if  $D = 0$  Compute:  $x = -b / 2a$  Display equal real roots.
6. Else ( $D < 0$ ) Compute: Real part =  $-b / 2a$  Imaginary part =  $\sqrt{-D} / 2a$  Display complex roots.
7. Stop.

### **Flowchart:-**



### **Execution:-**

**2.1.1. Roots of a Quadratic Equation**

Write a program to find the roots of a quadratic equation, given its coefficients  $a$ ,  $b$ , and  $c$ . Use the quadratic formula: 
$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

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>
```

**Sample Test Cases**

**Code Editor:**

```
quadratic...
1 import math
2
3 a, b, c = map(int, input().split())
4
5 D = b*b - 4*a*c
6
7 if D > 0:
8     root1 = (-b + math.sqrt(D)) / (2*a)
9     root2 = (-b - math.sqrt(D)) / (2*a)
10    print("root1 = {:.2f}\nroot2 = {:.2f}".format(root1))
11    print("root1 = {:.2f}\nroot2 = {:.2f}".format(root2))
```

Average time: 0.015 s Maximum time: 0.019 s 3 out of 3 shown test case(s) passed  
14.83 ms 19.00 ms 3 out of 3 hidden test case(s) passed

**Test Case 1** Expected output: 1.5 - 3.0 Actual output: 1.5 - 3.0 root1 = -3.00 root2 = 2.00

**Test Case 2** Expected output: 1.5 - 3.0 Actual output: 1.5 - 3.0 root1 = -3.00 root2 = 2.00

**Terminal** Test cases

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## Experiment 03:-

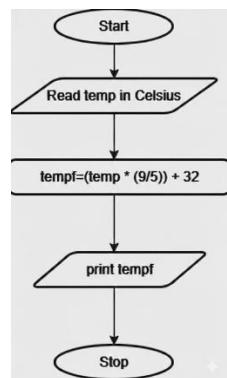
### **Problem Statement:-**

Write a Python program to convert temperature from Celsius to Fahrenheit.

### **Algorithm:-**

- Start.
- Input temperature in Celsius C.
- Calculate Fahrenheit using the formula  $F = (C \times 9/5) + 32$ .
- Display the temperature in Fahrenheit.
- Stop.

### **Flowchart:-**



## Execution:-

The screenshot shows a CodeTantra IDE interface. On the left, there's a problem statement titled "3.1.2. Celsius to Fahrenheit" which asks to write a Python program to convert temperature from Celsius to Fahrenheit. It provides a formula:  $Fahrenheit = (Celsius \times \frac{9}{5}) + 32$ . It also specifies input and output formats.

**Input Format:**  
• Single line contains a float value representing the temperature in Celsius.

**Output Format:**  
• Print the temperature in Fahrenheit as a float value formatted to 2 decimal places.

The code editor on the right contains the following Python script:

```
celcius = float(input())
fahrenheit = (celcius*9/5)+32
print("Fahrenheit: {:.2f}")
```

The status bar at the bottom indicates the file is 150 lines long and has 1 error. There are buttons for "Submit" and "Logout".