1.1.1. Area of Circle

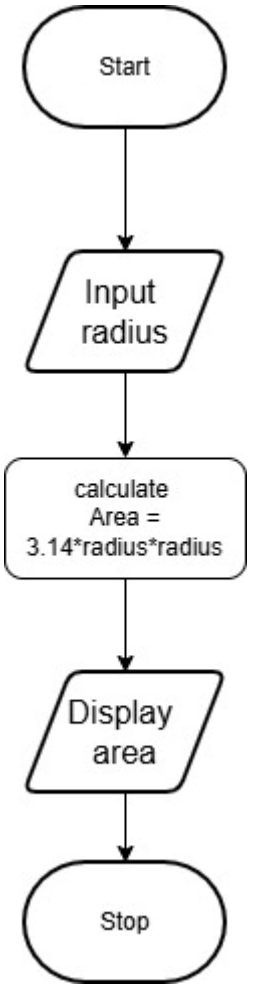
Algorithm:

1. Start
2. Read the radius of the circle as a floating-point number.
3. Assign the value of π as 3.14.
4. Calculate the area using the formula:

$$\text{Area} = \pi \times radius \times radius$$

5. Display the calculated area formatted to 4 decimal places.
6. Stop

Flowchart:



Course

sitnagpur.codetantra.com/secure/course.jsp?eucId=693fa60b79739f1e1d81ca43#/contents/693fa6b179739f1e1d81cc18/...

CODETANTRA Home vineet.gadhwal.batch2025@sitnagpur.siu.edu.in Support Logout

1.1.1. Area of Circle

04:34

Write a Python program that calculates the area of a circle when the radius is provided by the user. Use π = 3.14 and display the area.

Input Format:

- A single line containing a floating-point number representing the radius.

Output Format:

- Print the computed area of the circle formatted to 4 decimal places.

Sample Test Cases +

Explorer

circlearea...

Submit

```
1  #Write your code here...
2  radius = float(input())
3  area = 3.14 * radius * radius
4  print (f"{area:.4f}")
```

Debugger

Terminal Test cases

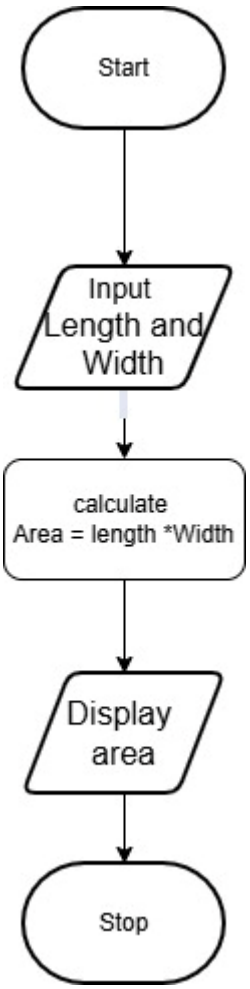
‹ Prev Reset Submit Next ›

1.1.2. Area of Rectangle

Algorithm:

1. Start
2. Read the length of the rectangle as a floating-point number.
3. Read the width of the rectangle as a floating-point number.
4. Calculate the area using the formula:
   Area = length × width
5. Display the area formatted to 2 decimal places.
6. Stop

Flowchart:



1.1.2. Area of Rectangle

03:21

Write a Python program to calculate the area of a rectangle given its length and width.

Formula:

$$\text{Area of Rectangle} = \text{Length} \times \text{Width}$$

Input Format:

- First line contains a float value representing the length of the rectangle
- Second line contains a float value representing the width of the rectangle

Output Format:

- Print the area of the rectangle as a float value formatted to 2 decimal places.

Sample Test Cases +

Explorer

areaOfRe...

Submit

```
1  # Type Content here...
2  length = float(input())
3  width = float(input())
4  area = length * width
5  print (f"{area:.2f}")
```

Debugger

Terminal Test cases

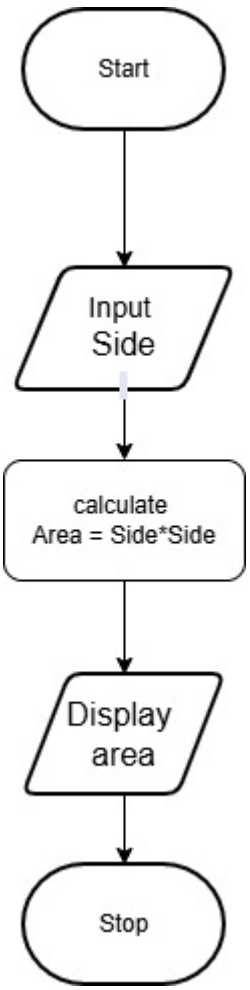
1.1.3. Calculate Area of the Square

Algorithm:

1. Start
2. Read the side length of the square as a positive integer.
3. Calculate the area using the formula:

   Area = side_length × side_length
4. Display the calculated area.
5. Stop

Flowchart:



Course

sitnagpur.codetantra.com/secure/course.jsp?eucId=693fa60b79739f1e1d81ca43#/contents/693fa6b179739f1e1d81cc18/...

CODETANTRA Home vineet.gadhwal.batch2025@sitnagpur.siu.edu.in Support Logout

1.1.3. Calculate Area of the Square

04:25

Write a Python program that prompts the user to enter the *side_length* of a square and computes the area of the square.

Formula:

- $\text{Area} = \text{side\_length}^2$

Input Format:

- The input is a positive integer value that represents the *side_length* of the square.

Output Format:

- The output is a positive integer value that represents the area of the square.

Sample Test Cases +

Explorer

AreaSqua...

Submit

```
1  # Write your code here...
2  side_length = int(input())
3  area = side_length * side_length
4  print (area)
5
6
7
8
9
```

Debugger

Terminal Test cases

‹ Prev Reset Submit Next ›

1.1.4. Area of Triangle

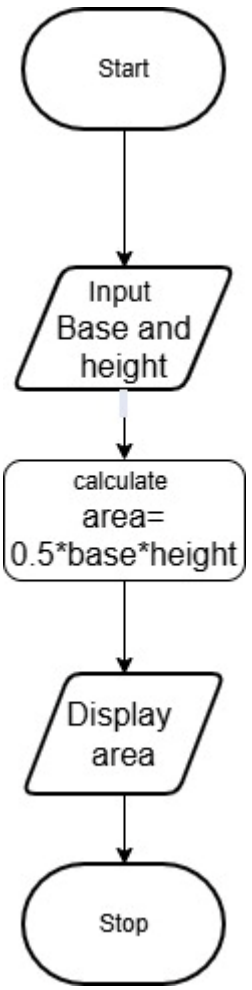
Algorithm:

1. Start
2. Read the base of the triangle as a floating-point number.
3. Read the height of the triangle as a floating-point number.
4. Calculate the area using the formula:

   $$\text{Area} = 1/2 \times \text{base} \times \text{height}$$

5. Display the area formatted to 2 decimal places.
6. Stop

Flowchart:



1.1.4. Area of Triangle

01:45

Write a Python program that prompts the user to enter the triangle's base and height and computes the triangle's area.

Formula: $Area\ of\ Triangle\ =\ 0.5\ \times base\ \times height.$

Input Format:

- The first line of input is the float value that represents the base of the triangle.
- The second line of input is the float value that represents the height of the triangle.

Output Format:

- The output is the floating point value that represents the area of a triangle, formatted to two decimals.

Sample Test Cases +

Explorer

triangleA...

Submit

```
1  # Write your code here...
2  base = float(input())
3  height = float(input())
4  area = 0.5 * base * height
5  print (f"{area:.2f}")
```

Debugger

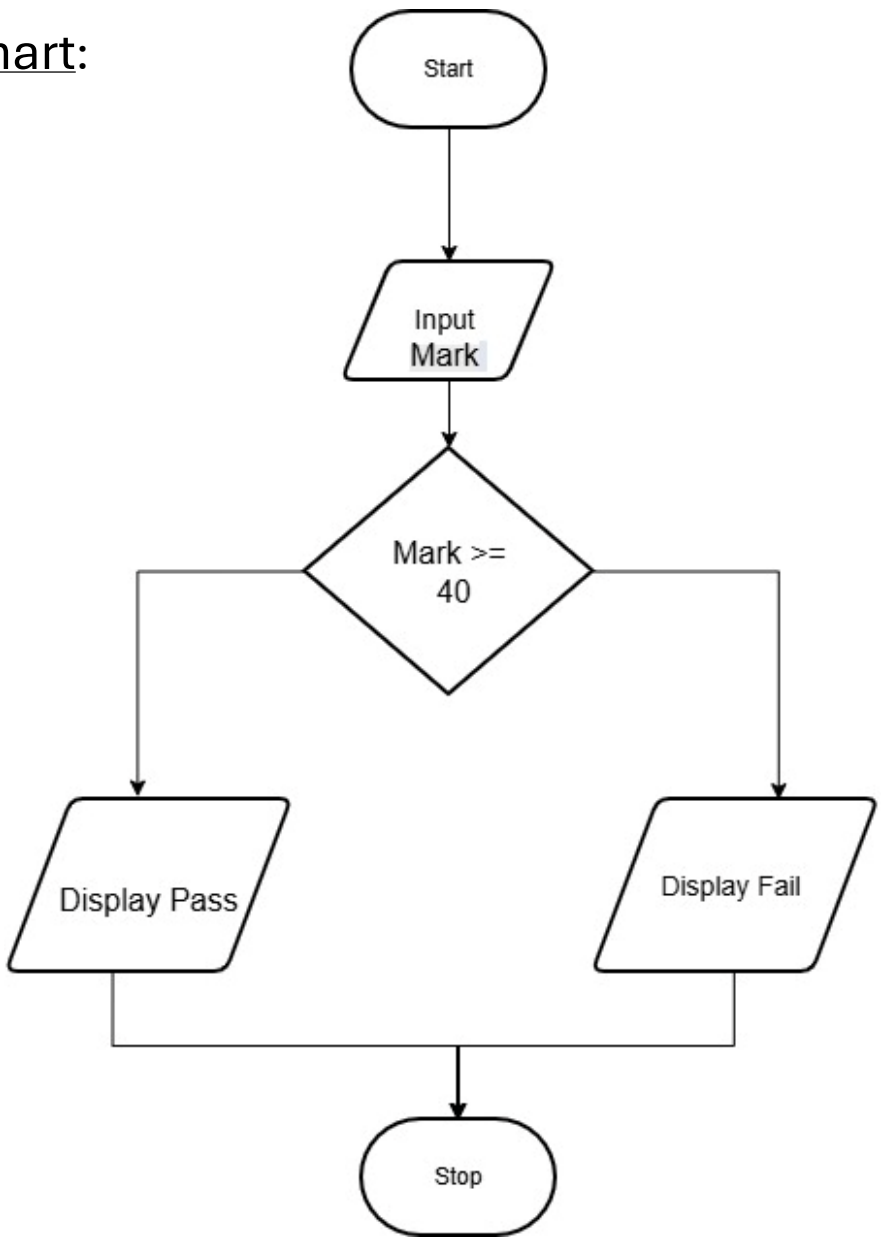
Terminal Test cases

1.1.5. Student Pass or Fail Status

Algorithm:

1. Start
2. Read the marks obtained by the student as an integer.
3. Check if the marks are greater than or equal to 40.
- If yes, print "Pass".
- If no, print "Fail".
4. Stop

Flowchart:



1.1.5. Student Pass or Fail Status

03:39

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.

Sample Test Cases +

Explorer

passOrFa...

Submit

```
1  # Type Content here...
2  marks = int(input())
3  if marks >= 40:
4      print("Pass")
5  else:
6      print("Fail")
```

Debugger

Terminal Test cases

‹ Prev Reset Submit Next ›

2.1.1. Roots of a Quadratic Equation

Algorithm:

1. Start
2. Read three integers a, b, and c.
3. Calculate the discriminant:

$$D = b\text{^}2 - 4ac$$

4. Check the value of the discriminant D:

- If D>0
  1. Calculate

$$root1 = -b + \sqrt{D} \,/\, 2a$$

$$root2 = -b - \sqrt{D} \,/\, 2a$$

  2. Print root1 and root2 formatted to 2 decimal places.

- Else if D=0

  1. Calculate

$$root = -b \,/\, 2a$$

  2. Print root1 = root2 = root formatted to 2 decimal places.

- Else (D<0)

  1. Calculate real part:

$$realPart = -b \,/\, 2a$$

  2. Calculate imaginary part:

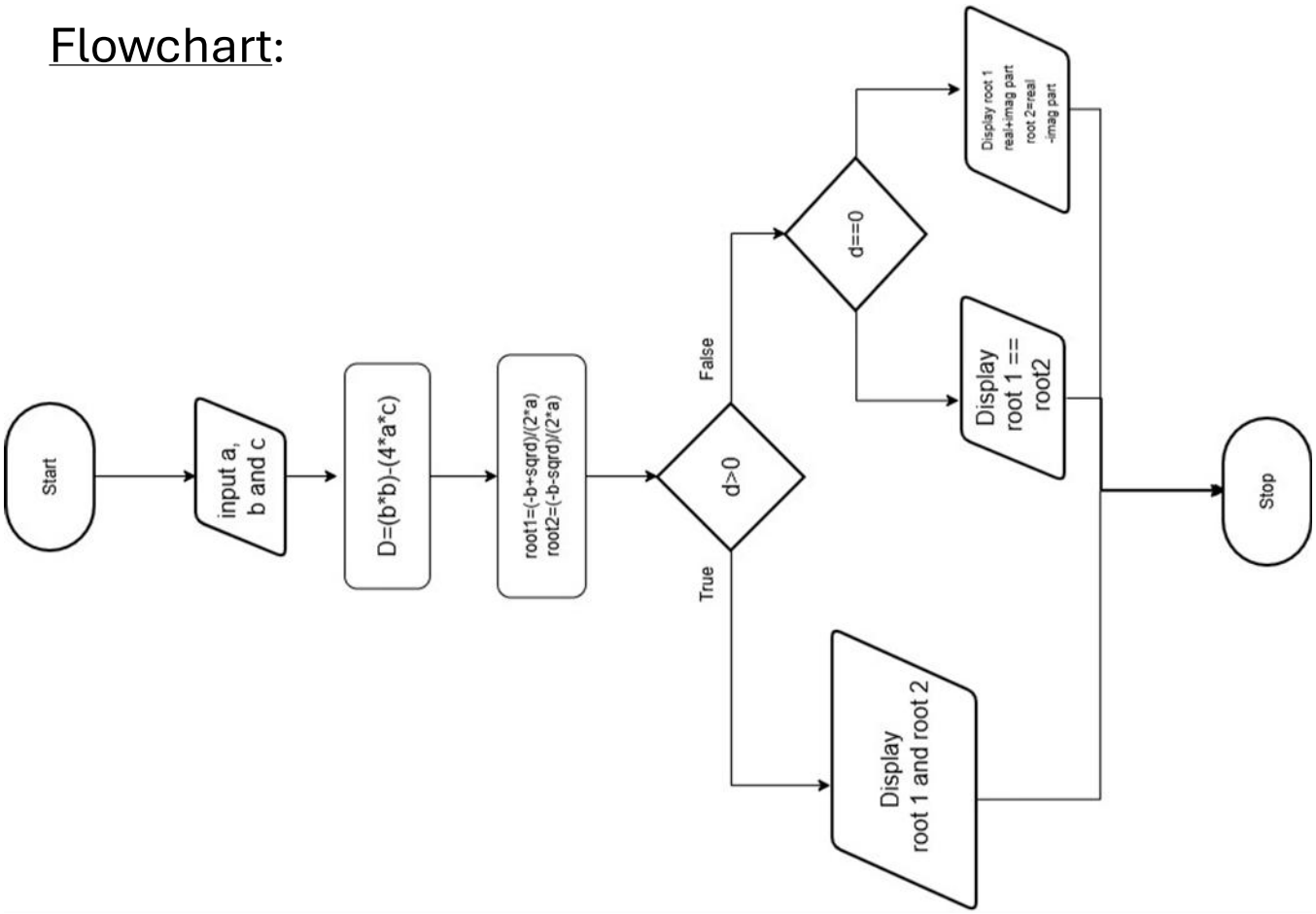
$$imaginaryPart = \sqrt{-D} \,/\, 2a$$

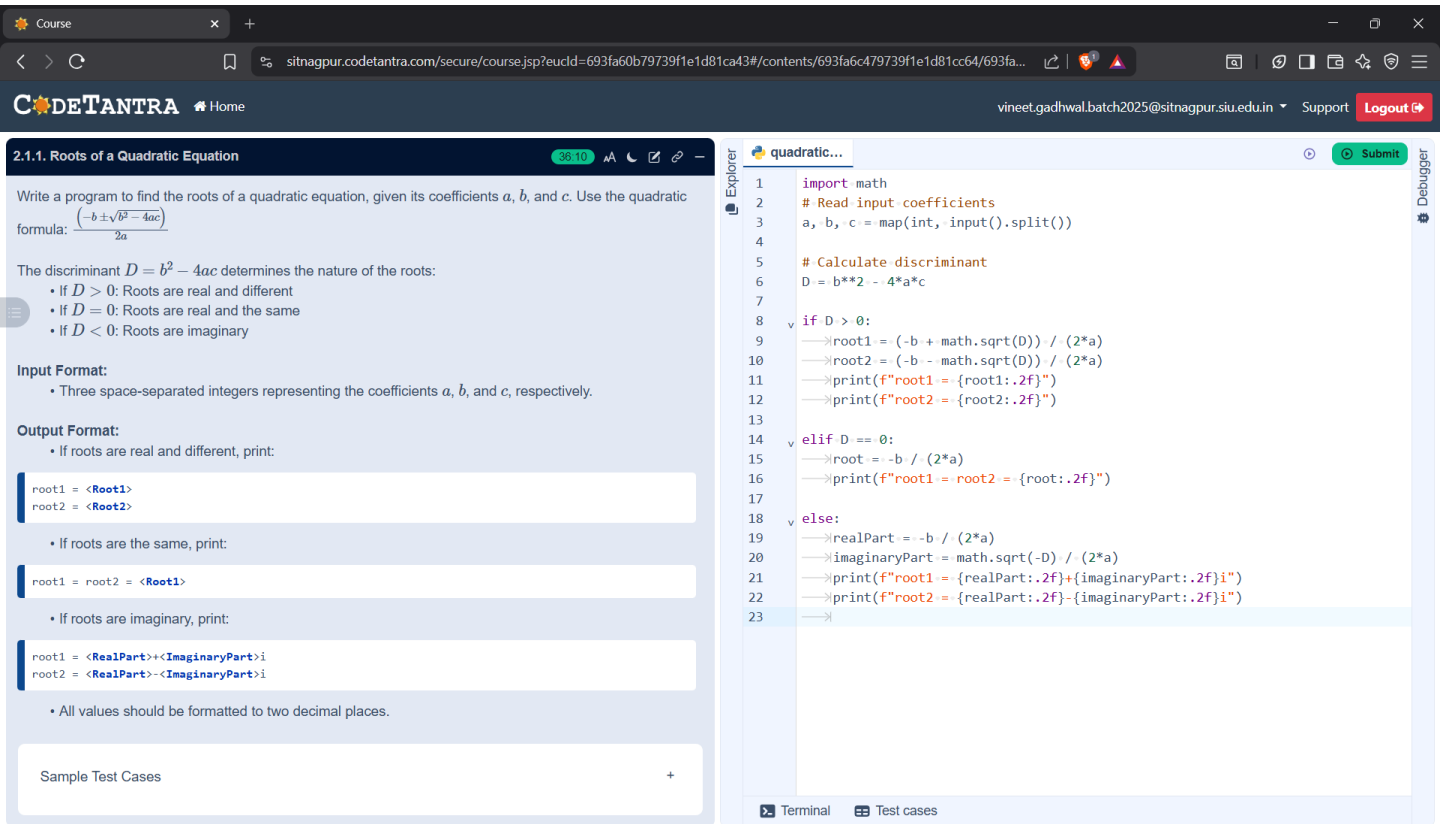
  3. Print:

root1 = realPart + imaginaryPart i
root2 = realPart - imaginaryPart i

5. Stop

Flowchart:


Start
input a, b and c
D=(b*b)-(4*a*c)
root1=(-b+sqrd)/(2*a)
root2=(-b-sqrd)/(2*a)
d>0
False
True
d==0
Display root 1 real+-imag part root 2=real -imag part
Display root 1 == root2
Display root 1 and root 2
Stop


Course
sitnagpur.codetantra.com/secure/course.jsp?eucId=693fa60b79739f1e1d81ca43#/contents/693fa6c479739f1e1d81cc64/693fa...
CODETANTRA
Home
vineet.gadhwal.batch2025@sitnagpur.siu.edu.in
Support
Logout
2.1.1. Roots of a Quadratic Equation
36:10
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>
• 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
# Read input coefficients
a, b, c = map(int, input().split())
# Calculate discriminant
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:
realPart = -b / (2*a)
imaginaryPart = math.sqrt(-D) / (2*a)
print(f"root1 = {realPart:.2f}+{imaginaryPart:.2f}i")
print(f"root2 = {realPart:.2f}-{imaginaryPart:.2f}i")
Terminal
Test cases

3.1.1. Largest of Three Numbers

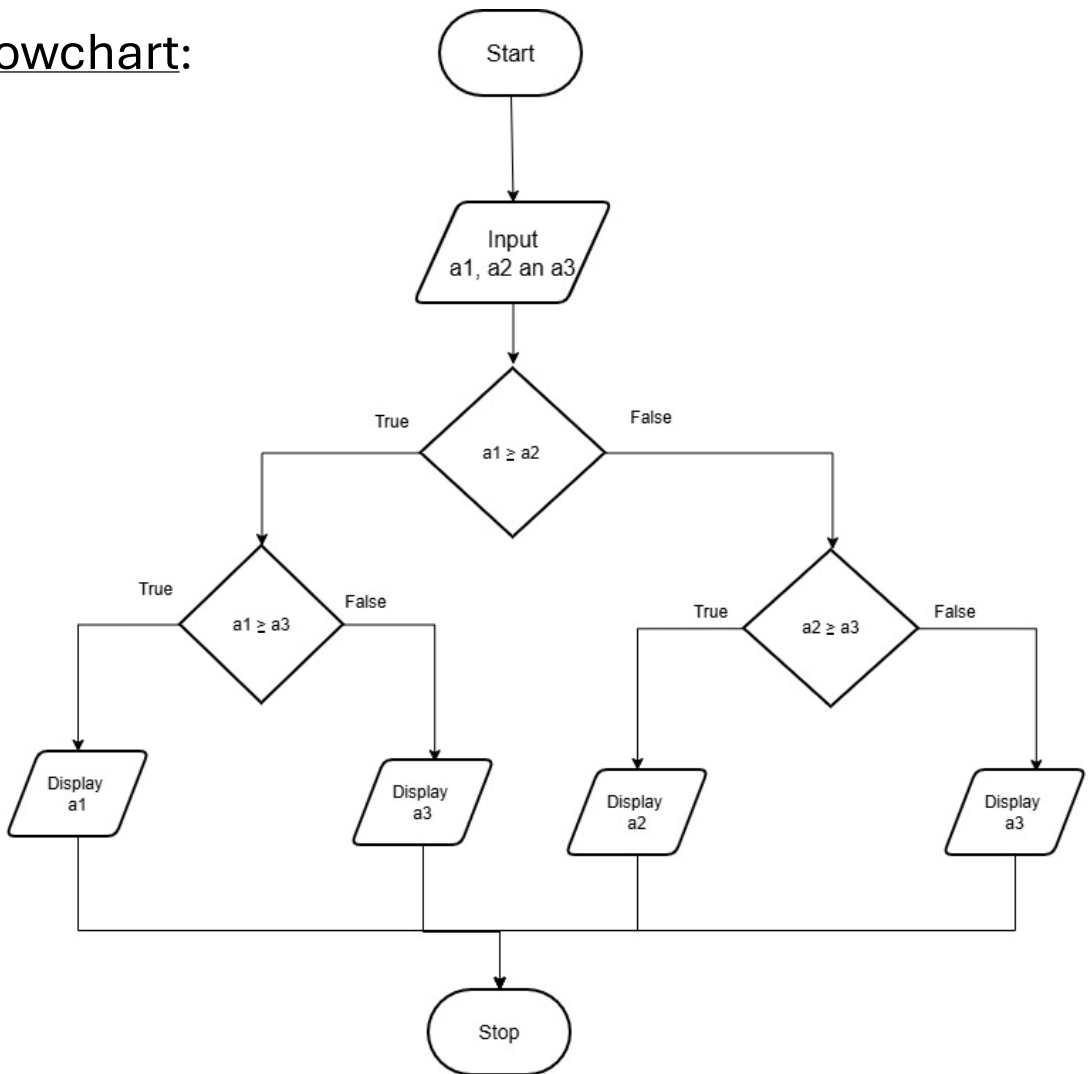
Algorithm:

1. Start
2. Read the first integer a.
3. Read the second integer b.
4. Read the third integer c.
5. Compare the three numbers:

- If a is greater than or equal to b and a is greater than or equal to c, then a is the largest.
- Else if b is greater than or equal to a and b is greater than or equal to c, then b is the largest.
- Else, c is the largest.

6. Display the largest number.
7. Stop

Flowchart:



3.1.1. Largest of Three Numbers

06:14

Write a Python program that prompts the user to enter three integers. Print the largest of the three integers.

Input Format:

- The program will prompt the user to enter three integers, one per line.

Output Format:

- The output will display the largest integer among the three integers.

Sample Test Cases +

Explorer

largestNu...

Submit

```
1  #write your code here...
2  a = int(input())
3  b = int(input())
4  c = int(input())
5
6  print(max(a, b, c))
7
```

Debugger

Terminal Test cases

3.1.2. Celsius to Fahrenheit

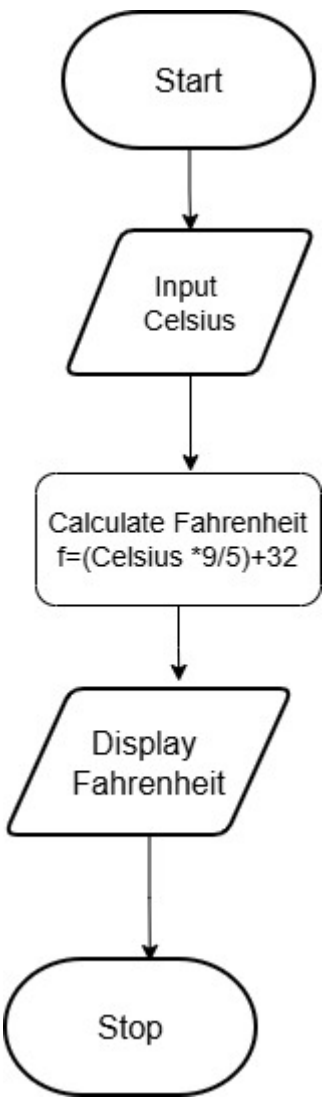
Algorithm:

1. Start
2. Read the temperature in Celsius as a floating-point number.
3. Convert the temperature to Fahrenheit using the formula:

$$Fahrenheit = (9/5 \times Celsius) + 32$$

4. Display the Fahrenheit temperature formatted to 2 decimal places.
5. Stop

Flowchart:



3.1.2. Celsius to Fahrenheit

02:01

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

Formula:

$$\text{Fahrenheit} = \left(\text{Celsius} \times \frac{9}{5}\right) + 32$$

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.

Sample Test Cases +

Explorer

temperat...

Submit

```
1  # Type Content here...
2  celsius = float(input())
3  fahrenheit = (celsius * 9/5) + 32
4  print(f"{fahrenheit:.2f}")
```

Debugger

Terminal Test cases

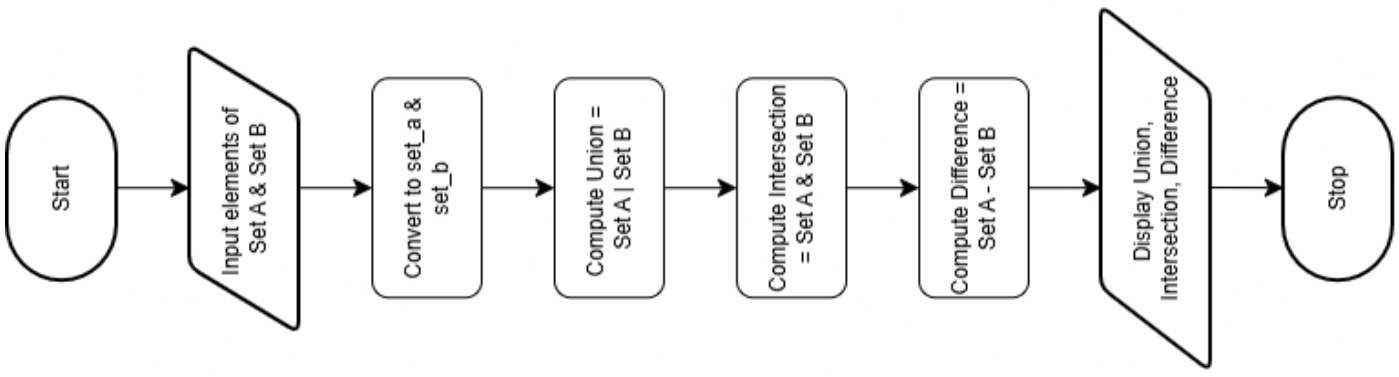
< Prev Reset Submit Next >

4.1.1. Set Operations

Algorithm:

1. Start
2. Prompt the user to enter elements of Set A (space-separated integers).
3. Convert the input values into a set → set_a.
4. Prompt the user to enter elements of Set B.
5. Convert the input values into a set → set_b.
6. Compute Union:
   union_result = set_a ∪ set_b
7. Compute Intersection:
   intersection_result = set_a ∩ set_b
8. Compute Difference
   difference_result = set_a − set_b
9. Display Union, Intersection & Difference.

Flowchart:



Course

sitnagpur.codetantra.com/secure/course.jsp?eucId=693fa60b79739f1e1d81ca43#/contents/693fa6de79739f1e1d81cc98/...

CODETANTRA Home vineet.gadhwal.batch2025@sitnagpur.siu.edu.in Support Logout

4.1.1. Set Operations

13:29

Write a Python program to perform union, intersection and difference operations on $Set\ A$ and $Set\ B$.

Input Format:

- First Line prompts "Set A: " followed by space-separated list of integers for $Set\ A$.
- The second input prompts "Set B: " followed by space-separated list of integers for $Set\ B$.

Output Format:

- The first line prints "Union: " followed by the union of $Set\ A$ and $Set\ B$.
- The second line prints "Intersection: " followed by the intersection of $Set\ A$ and $Set\ B$.
- The third line prints "Difference: " followed by the difference of $Set\ A$ and $Set\ B$.

Note:

- If there is no intersection between the two sets, the program prints an empty set, which appears as "set()" in the output.

Sample Test Cases +

Explorer

setoperat...

Submit

Debugger

```
1  # Type Content here...
2  set_a = set(map(int, input("Set A: ").split()))
3  set_b = set(map(int, input("Set B: ").split()))
4
5  union_result = set_a.union(set_b)
6  intersection_result = set_a.intersection(set_b)
7  difference_result = set_a.difference(set_b)
8
9
10 print("Union:", union_result)
11 print("Intersection:", intersection_result)
12 print("Difference:", difference_result)
13
```

Terminal Test cases

‹ Prev Reset Submit Next ›