

Experiment - 1.1.1. Area of Circle

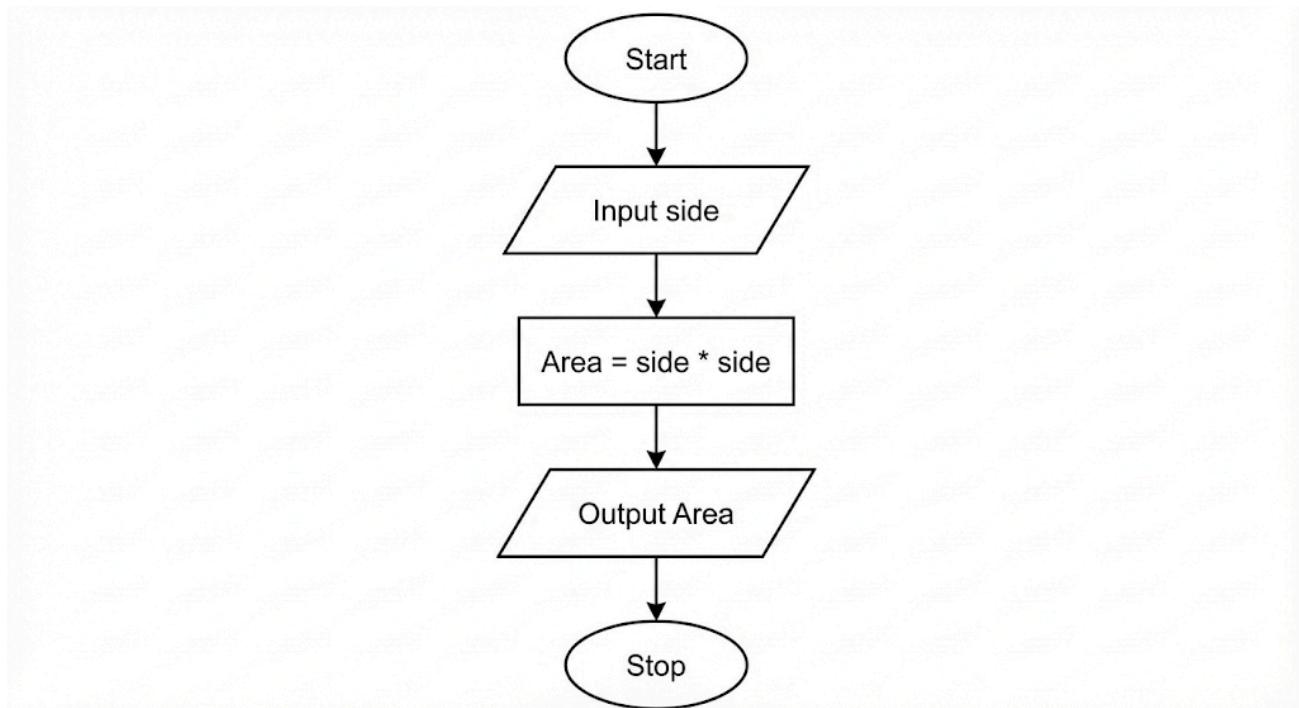
1. Aim

To write a Python program that calculates the area of a circle given its radius as input from the user, using the constant value of $\pi = 3.14$ and displaying the result formatted to four decimal places.

2. Pseudocode

1. **START**
2. **READ** the input value from the user and convert it to a floating-point number.
3. **STORE** the value in a variable named **radius**.
4. **DEFINE** a constant variable **pi** and assign it the value 3.14.
5. **CALCULATE** the area using the formula: $Area = \pi \times radius \times radius$.
6. **FORMAT** the resulting area to 4 decimal places.
7. **PRINT** the formatted area.
8. **END**

3. Flowchart



4. Python Program

```
# Program to calculate the area of a circle
# Input: Radius as a float
# Output: Area formatted to 4 decimal places

# Taking input from the user
radius = float(input())

# Constant value of Pi
pi = 3.14

# Calculating area
area = pi * radius * radius

# Displaying the result formatted to 4 decimal places
print(f"{area:.4f}")
```

5. Experiment Screenshot

The screenshot shows the CodeTantra IDE interface. The top navigation bar includes 'CODETANTRA', 'Home', 'Logout', and other account-related links. The main workspace has a title '1.1.1. Area of Circle' and a timer at 00:27. On the left, there's a sidebar with 'Sample Test Cases' containing two test cases: 'Test case 1' with input '3.36' and output '35.4493', and 'Test case 2' with input '2' and output '12.5600'. The central code editor window shows a Python script named 'circlearea...' with the following code:

```
radius = float(input())
pi = 3.14
area = pi * radius * radius
print(f"{area:.4f}")
```

The code editor includes an 'Explorer' sidebar with file details and a 'Submit' button. Below the code editor, a results summary shows 'Average time 0.006 s' and 'Maximum time 0.010 s'. It also displays two green checkmarks indicating '2 out of 2 shown test case(s) passed' and '2 out of 2 hidden test case(s) passed'. A detailed view of 'Test case 1' shows the expected output '3.36' and actual output '35.4493'. At the bottom, there are buttons for 'Terminal', 'Test cases', and navigation links like '< Prev', 'Reset', 'Submit', and 'Next >'.