



Shri Yashwantrao Bhonsale Education Society's  
**YASHWANTRAO BHONSALE INSTITUTE OF TECHNOLOGY**

**(DTE CODE : 3470) (MSBTE Code : 1742)**

Approved by AICTE, DTE & Affiliated to Mumbai University & MSBTE Mumbai  
(NBA Accredited ME, CE, EE Diploma Programs)

## **Practical No 2**

### **Aim**

Write a Python program to calculate areas of geometric figures like circle, rectangle, and triangle.

### **Apparatus / Software Required**

- Python Interpreter (Python 3.14.2)

### **Theory**

#### **Calculation of Area of Geometric Figures**

The area of common geometric figures can be calculated using standard mathematical formulas in Python.

#### **1. Area Formulas**

##### **Circle**

**Formula:**

$$\text{Area} = \pi * r * r$$

**Where:**

- $\pi$  (pi) is a constant
- $r$  is the radius of the circle

##### **Rectangle**

**Formula:**

$$\text{Area} = l * b$$

**Where:**

- $l$  is the length
- $b$  is the breadth



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## Triangle

Formula:

$$\text{Area} = 0.5 * b * h$$

Where:

- b is the base
- h is the height

## 2. Variables

Variables are used to store input values and calculated areas.

Examples:

- **r** → radius
- **l** → length
- **b** → breadth or base
- **h** → height

## 3. Data Types

- **float** data type is used to handle decimal values.

Example:

- **float(input())**

## 4. Input Function

- **input()** is used to accept values from the user.
- Input is initially taken as a string.

## 5. Type Conversion

- Input values are converted from string to float using **float()**.  
Example:
- **r = float(input())**



## 6. Arithmetic Operators

- `*` → multiplication
- `+` → addition
- `/` → division

## 7. Mathematical Constants and Modules

- The `math` module is used for mathematical operations.
- `math.pi` is used to get the value of  $\pi$  for circle area calculation.

## 8. Expressions

Mathematical formulas are written using Python syntax.

Example:

- `area_circle = math.pi * r * r`

## 9. Output Function

- `print()` is used to display the calculated areas.

## 10. Sequential Execution

- Python executes statements line by line in the order they are written.

## Algorithm

1. Start
2. Input radius of the circle
3. Calculate area of the circle using  $\pi \times r \times r$
4. Input length and breadth of the rectangle
5. Calculate area of the rectangle using  $\text{length} \times \text{breadth}$
6. Input base and height of the triangle
7. Calculate area of the triangle using  $\frac{1}{2} \times \text{base} \times \text{height}$
8. Display all calculated areas
9. Stop



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