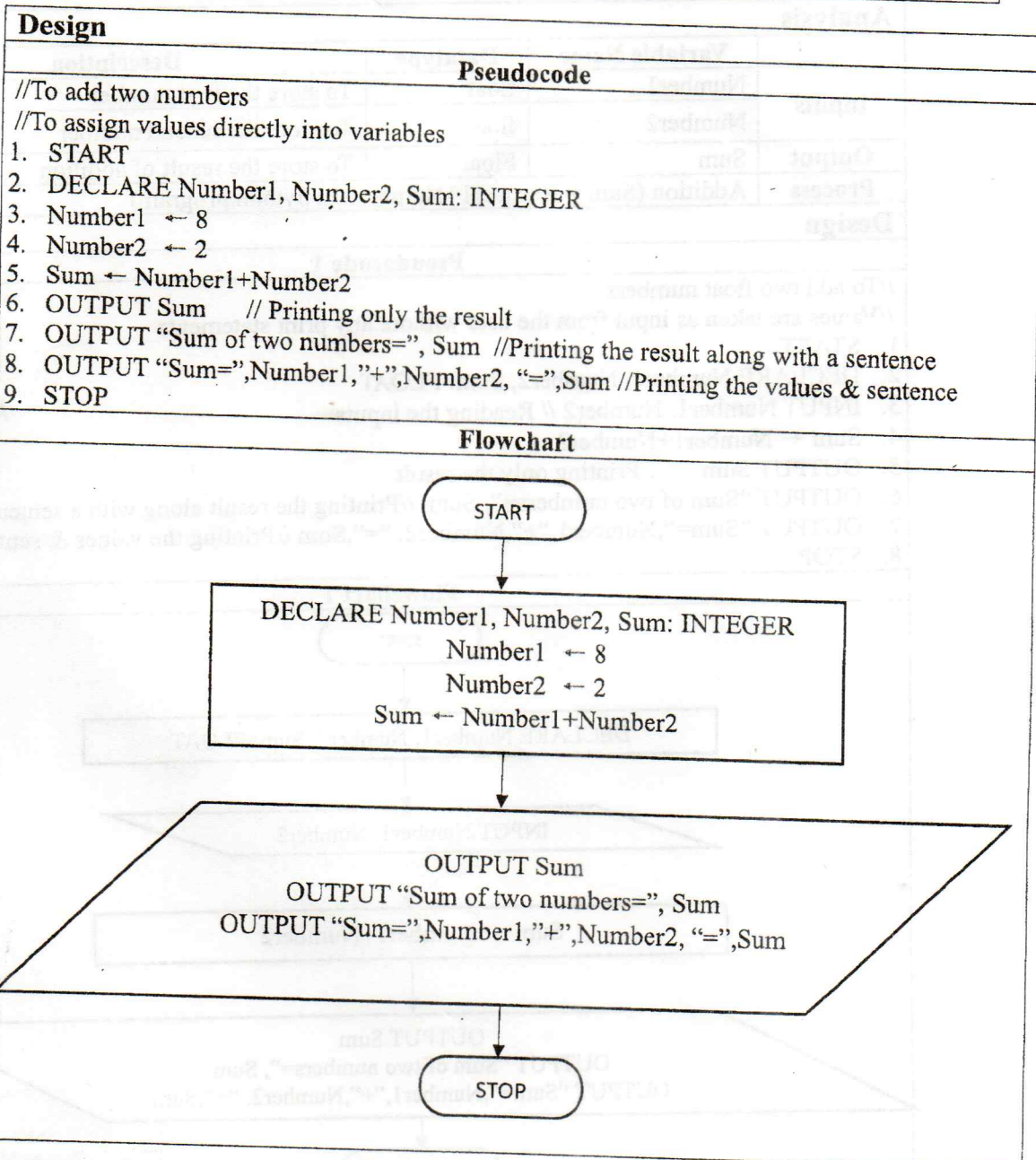


PSEUDOCODE, FLOWCHART & PYTHON PROGRAM

- I. Write pseudocode, python program & draw flowchart for the following
1. To add two integers by assigning values into the variables

Analysis			
	Variable Name	Datatype	Description
Inputs	Number1	INTEGER	To store the first number
	Number2	INTEGER	To store the second number
Output	Sum	INTEGER	To store the result of addition
Process	Addition (Sum = Number1+Number2 in python program)		



Python Program

1. Number1=8 #Assigning the value 8 to the variable Number1
2. Number2=2 #Assigning the value 2 to the variable Number2
3. Sum=Number1+Number2 #Addition
4. print(Sum) # Printing the value stored in the variable Sum
5. print("Sum of two numbers=",Sum) #Printing the result along with the statements
6. print("Sum=",Number1,"+",Number2,"=", Sum) #Combining print statements with values

Output

10

Sum of two numbers= 10

Sum= 8 + 2 = 10

2. To add two float numbers by reading any numbers of user's choice

Analysis

	Variable Name	Datatype	Description
Inputs	Number1	float	To store the first number
	Number2	float	To store the second number
Output	Sum	Float	To store the result of addition
Process	Addition (Sum = Number1+Number2 in python program)		

Design

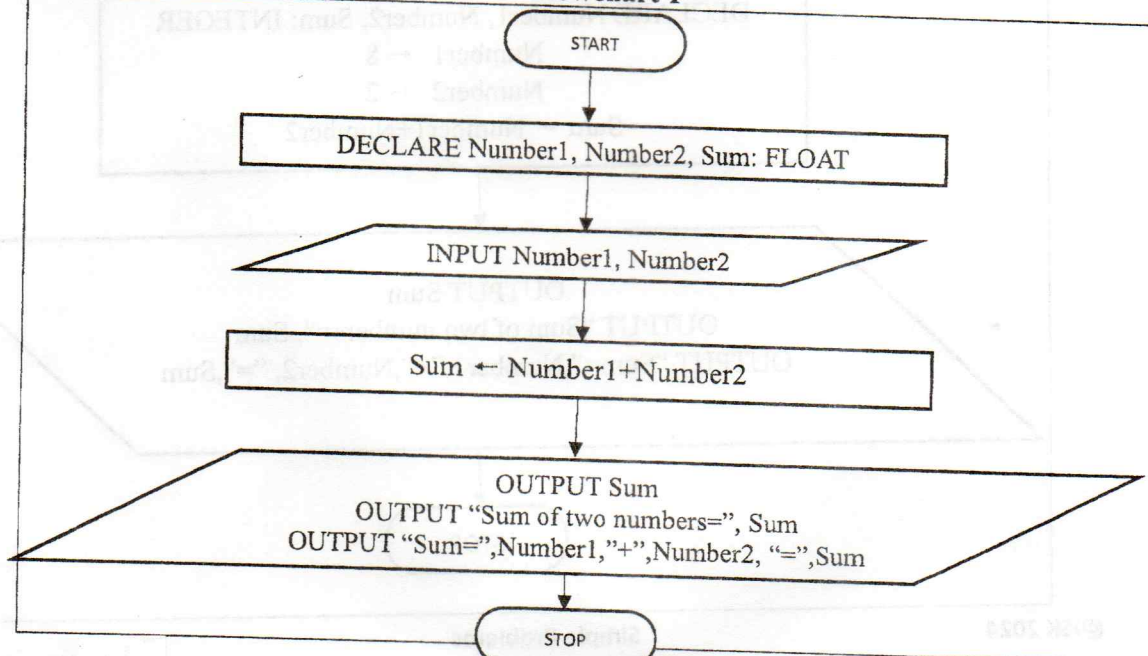
Pseudocode 1

//To add two float numbers

//Values are taken as input from the user without any print statements

1. START
2. DECLARE Number1, Number2, Sum: FLOAT
3. INPUT Number1, Number2 // Reading the inputs
4. Sum $\leftarrow$ Number1+Number2
5. OUTPUT Sum // Printing only the result
6. OUTPUT "Sum of two numbers=", Sum //Printing the result along with a sentence
7. OUTPUT "Sum=",Number1,"+",Number2, "=",Sum //Printing the values & sentence
8. STOP

Flowchart 1



Python Program 1

1. Number1=float(input()) #Reading the input from user & storing to the variable Number1
2. Number2=float(input()) # Reading the input from user & storing to the variable Number2
3. Sum=Number1+Number2 #Addition
4. print(Sum) # Printing the value stored in the variable Sum
5. print("Sum of two numbers=",Sum) #Printing the result along with the statements
6. print("Sum=",Number1,"+",Number2,"=", Sum) #Combining print statements with values

Output

5.23

4.51

9.74

Sum of two numbers= 9.74

Sum= 5.23 + 4.51 = 9.74

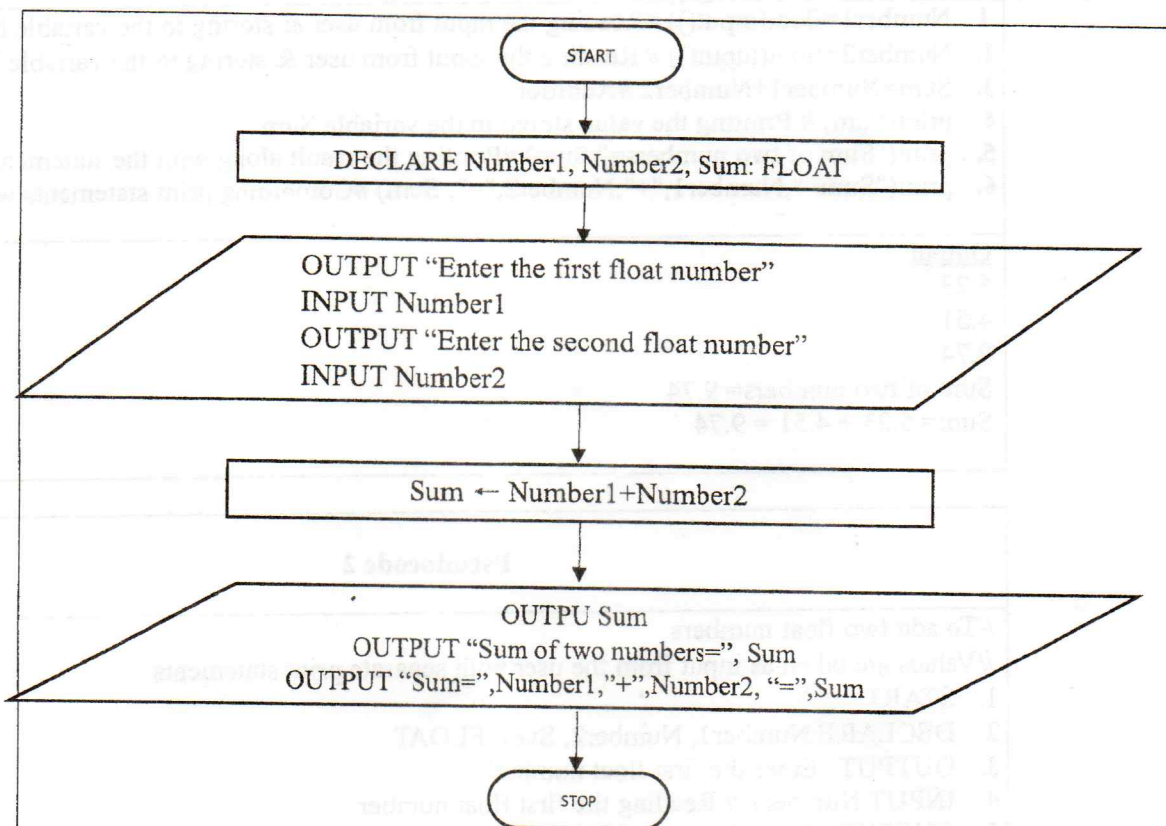
Pseudocode 2

//To add two float numbers

//Values are taken as input from the user with separate print statements

1. START
2. DECLARE Number1, Number2, Sum: FLOAT
3. OUTPUT "Enter the first float number"
4. INPUT Number1 // Reading the first float number
5. OUTPUT "Enter the second float number"
6. INPUT Number2 // Reading the second float number
7. Sum ← Number1+Number2 //Addition
8. OUTPUT Sum // Printing only the result
9. OUTPUT "Sum of two numbers=", Sum //Printing the result along with a sentence
10. OUTPUT "Sum=",Number1,"+",Number2,"=",Sum //Printing the values & sentence
11. STOP

Flowchart 2



Python Program 2

1. `print("Enter the first float number")`
2. `Number1=float(input())` #Reading the input from user & storing to the variable Number1
3. `print("Enter the second float number")`
4. `Number2=float(input())` # Reading the input from user & storing to the variable Number2
5. `Sum=Number1+Number2` #Addition
6. `print(Sum)` # Printing the value stored in the variable Sum
7. `print("Sum of two numbers=",Sum)` #Printing the result along with the statements
8. `print("Sum=",Number1,"+",Number2,"=", Sum)` #Combining print statements with values

Output

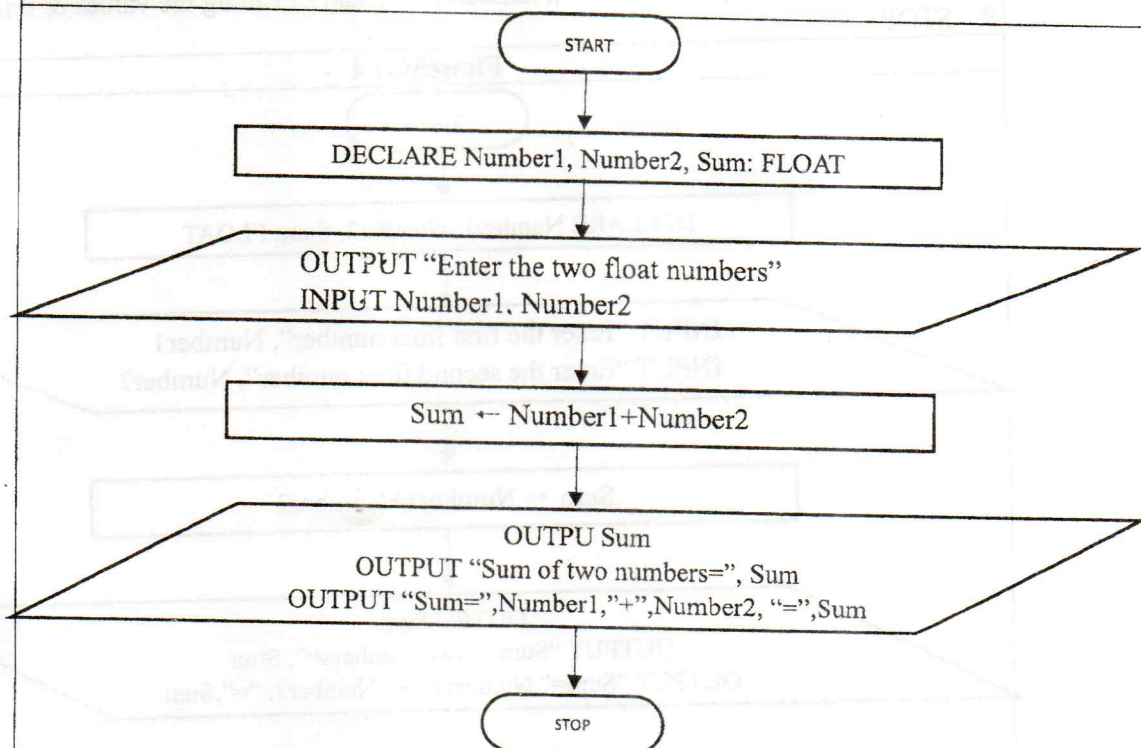
Enter the first float number
8.5
Enter the second float number
20.4
28.9
Sum of two numbers= 28.9
Sum= 8.5 + 20.4 = 28.9

Pseudocode 3

//To add two float numbers

//Values are taken as input from the user with only one print statement

1. START
2. DECLARE Number1, Number2, Sum: FLOAT
3. OUTPUT "Enter the two float numbers"
4. INPUT Number1, Number2 // Reading the two float numbers
5. $\text{Sum} \leftarrow \text{Number1} + \text{Number2}$ // Addition
6. OUTPUT Sum // Printing only the result
7. OUTPUT "Sum of two numbers=", Sum // Printing the result along with a sentence
8. OUTPUT "Sum=", Number1, "+", Number2, "=", Sum // Printing the values & sentence
9. STOP

**Python Program 3**

1. print("Enter the two float numbers")
2. Number1=float(input()) #Reading the input from user & storing to the variable Number1
3. Number2=float(input()) # Reading the input from user & storing to the variable Number2
4. Sum=Number1+Number2 #Addition
5. print(Sum) # Printing the value stored in the variable Sum
6. print("Sum of two numbers=",Sum) #Printing the result along with the statements
7. print("Sum=",Number1,"+",Number2,"=", Sum) #Combining print statements with values

Output

Enter the two float numbers

8.5

20.4

28.9

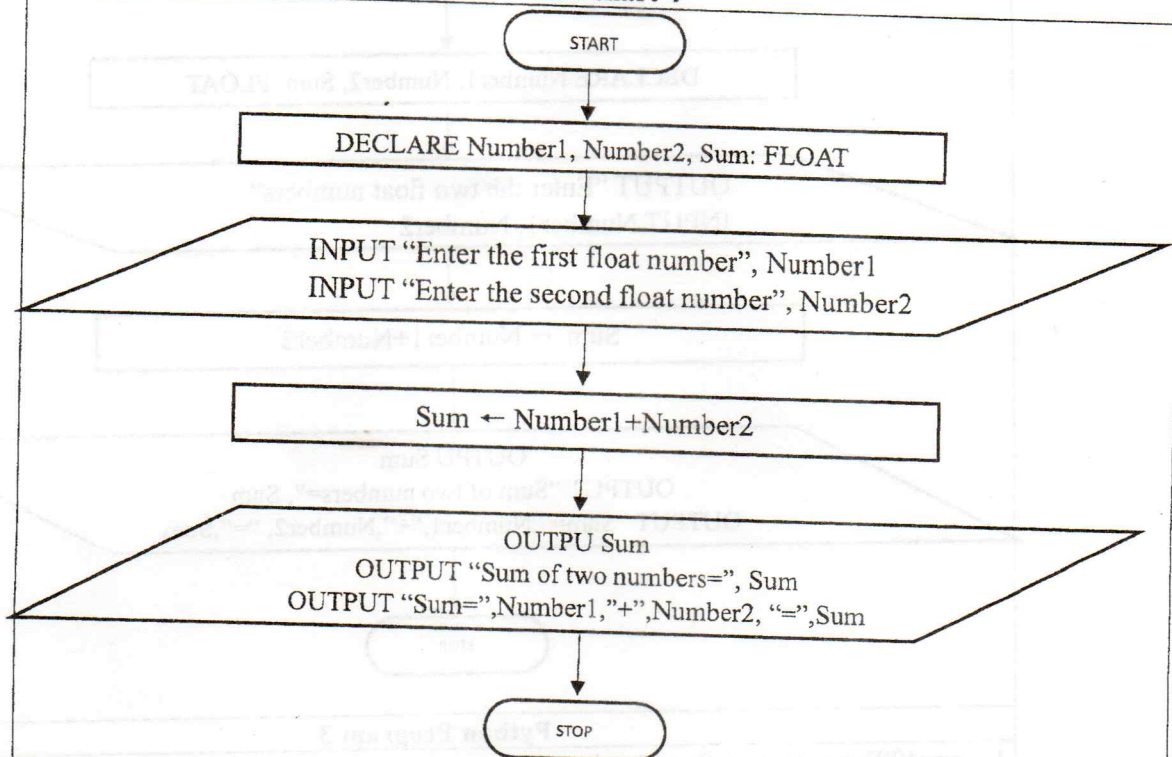
Sum of two numbers= 28.9

Sum= 8.5 + 20.4 = 28.9

Pseudocode 4 (Not Recommended as per the syllabus)

//To add two float numbers
 //Including both input & output statements in one single statement

1. START
2. DECLARE Number1, Number2, Sum: FLOAT
3. INPUT "Enter the first float number", Number1 // Reading the first float number
4. INPUT "Enter the second float number", Number2 // Reading the second float number
5. Sum $\leftarrow$ Number1+Number2 //Addition
6. OUTPUT Sum // Printing only the result
7. OUTPUT "Sum of two numbers=", Sum //Printing the result along with a sentence
8. OUTPUT "Sum=",Number1,"+",Number2,"=",Sum //Printing the values & sentence
9. STOP

Flowchart 4**Python Program 4**

```

#Reading the input from user & storing to the variable Number1
1. Number1=float(input("Enter the first float number"))
# Reading the input from user & storing to the variable Number2
2. Number2=float(input("Enter the second float number"))
3. Sum=Number1+Number2 #Addition
4. print(Sum) # Printing the value stored in the variable Sum
5. print("Sum of two numbers=",Sum) #Printing the result along with the statements
6. print("Sum=",Number1,"+",Number2,"=", Sum) #Combining print statements with values
  
```

Output

```

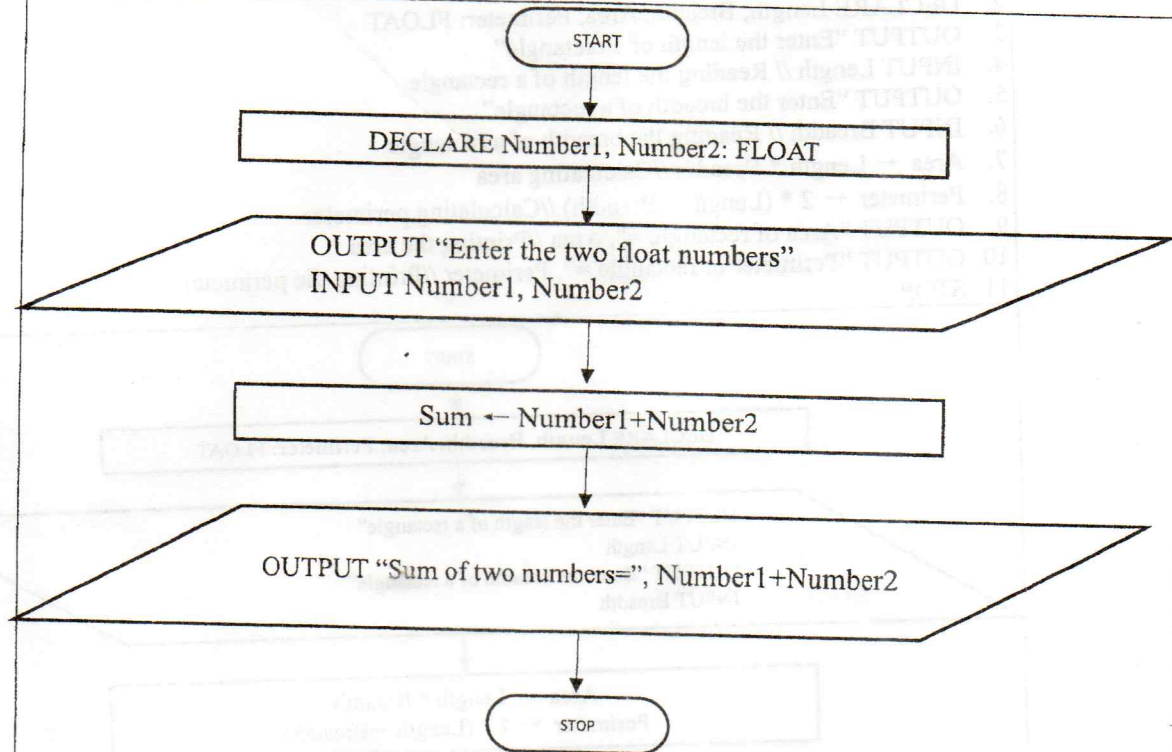
Enter the first float number 8.5
Enter the second float number 20.4
28.9
Sum of two numbers= 28.9
Sum= 8.5 + 20.4 = 28.9
  
```

Pseudocode 5

//To add two float numbers

//Performing addition without a third variable

1. START
2. DECLARE Number1, Number2: FLOAT
3. OUTPUT "Enter the two float numbers"
4. INPUT Number1, Number2 // Reading the two float numbers
5. OUTPUT "Sum of two numbers=", Number1+Number2 //Printing the result
6. STOP

Flowchart 5**Python Program 5**

1. print("Enter two float numbers")
#Reading the input from user & storing to the variable Number1
2. Number1=float(input())
Reading the input from user & storing to the variable Number2
3. Number2=float(input())
4. print("Sum of two numbers=",Number1+Number2) #Printing the result

Output

Enter the two float numbers

8.5

20.4

Sum of two numbers= 28.9

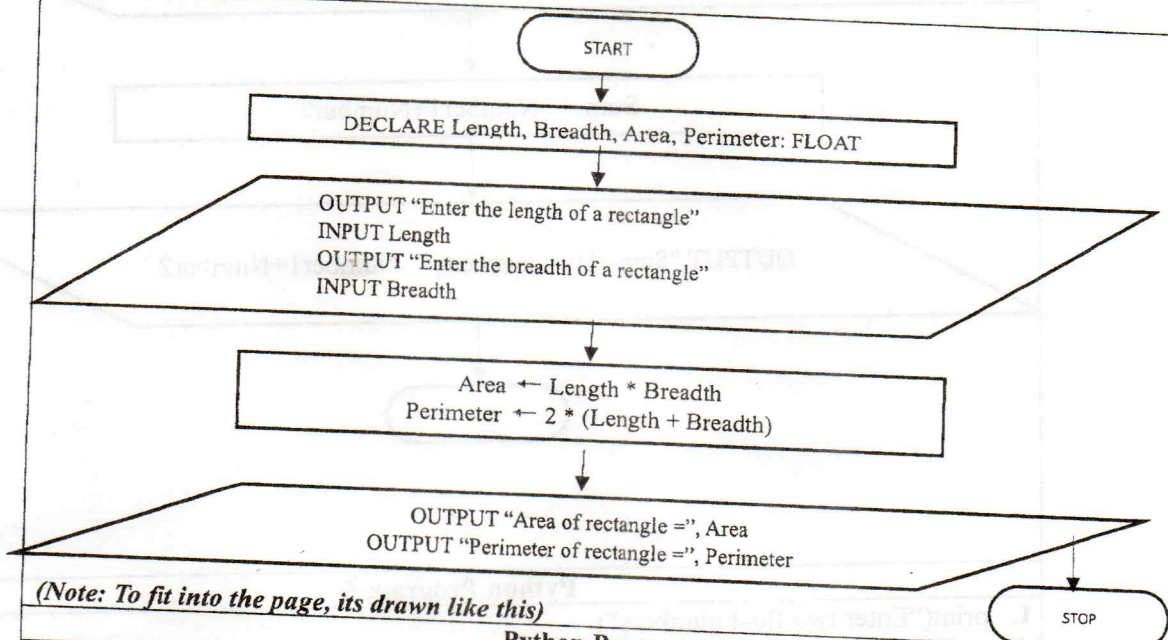
3. To find area and perimeter of a rectangle.

	Variable Name	Datatype	Description
Inputs	Length	FLOAT	To store the length of rectangle
	Breadth	FLOAT	To store the breadth of rectangle
Output	Area	FLOAT	To store the area of rectangle
	Perimeter	FLOAT	To store the perimeter of rectangle
Process	Area = Length * Breadth, Perimeter = 2 * (Length + Breadth)		

Pseudocode

//To find area & perimeter of a rectangle

1. START
2. DECLARE Length, Breadth, Area, Perimeter: FLOAT
3. OUTPUT "Enter the length of a rectangle"
4. INPUT Length // Reading the length of a rectangle
5. OUTPUT "Enter the breadth of a rectangle"
6. INPUT Breadth // Reading the breadth of a rectangle
7. Area $\leftarrow$ Length * Breadth //Calculating area
8. Perimeter $\leftarrow$ 2 * (Length + Breadth) //Calculating perimeter
9. OUTPUT "Area of rectangle =", Area //Printing the area
10. OUTPUT "Perimeter of rectangle =", Perimeter //Printing the perimeter
11. STOP



Python Program

1. print("Enter the length of a rectangle")
2. Length=float(input()) #Reading the length value & storing to the variable Length
3. print("Enter the breadth of a rectangle")
4. Breadth=float(input()) # Reading the breadth value & storing to the variable Breadth
5. Area = Length * Breadth #Calculating area
6. Perimeter = 2 * (Length + Breadth) #Calculating perimeter
7. print("Area of rectangle =", Area) #Printing the area
8. print("Perimeter of rectangle =", Perimeter) #Printing the perimeter

Output

Enter the length of a rectangle
1.2
Enter the breadth of a rectangle
2.1
Area of rectangle= 2.52
Perimeter of rectangle = 6.6

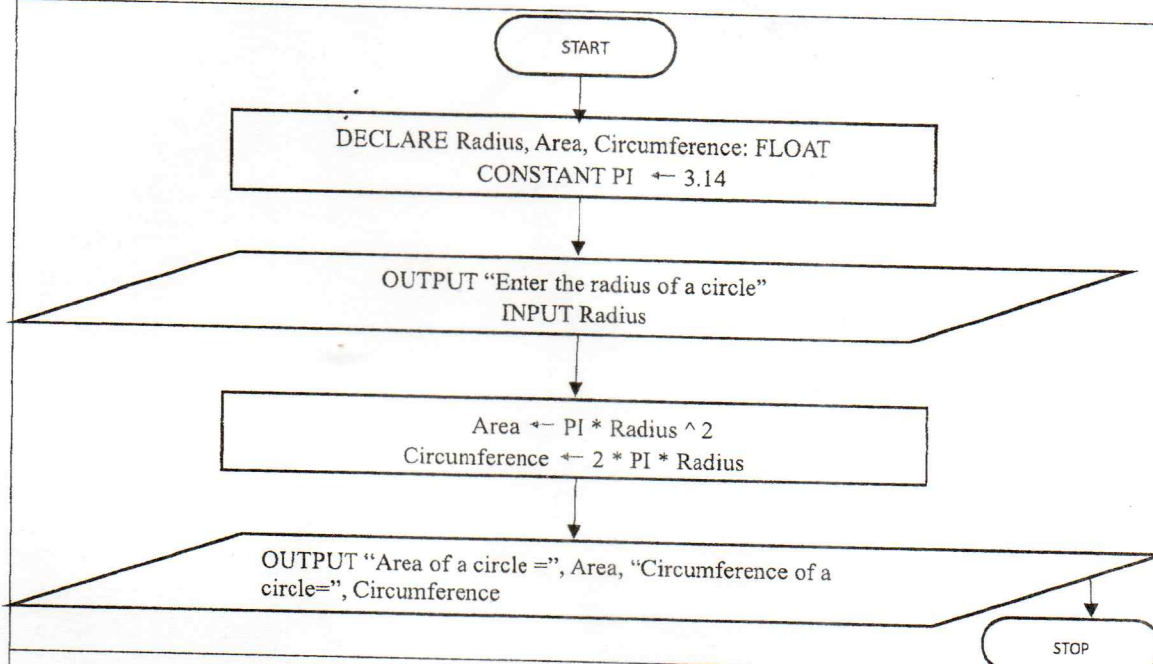
4. To find area and circumference of a circle. Use the constant to store the π value.

	Variable Name	Datatype	Description
Inputs	Radius	FLOAT	To store the radius of the circle
Output	Area	FLOAT	To store the area of the circle
	Circumference	FLOAT	To store the perimeter of the circle
Process	Area = πr^2 , Circumference = $2\pi r$		
Constant	PI=3.14		

Pseudocode

//To find area & circumference of the circle

1. START
2. DECLARE Radius, Area, Circumference: FLOAT
3. CONSTANT PI $\leftarrow$ 3.14
4. OUTPUT "Enter the radius of a circle"
5. INPUT Radius // Reading the radius of a circle
6. Area $\leftarrow$ PI * Radius 2 //Calculating area using Area $\leftarrow$ PI * Radius * Radius
7. Circumference $\leftarrow$ 2 * PI * Radius //Calculating perimeter
- //Printing the results
8. OUTPUT "Area of a circle =", Area, "Circumference of a circle =", Circumference
9. STOP



Python Program

1. print("Enter the radius of a circle")
2. Radius=float(input()) #Reading the radius value & storing to the variable Radius
3. PI=3.14 # Assigning the value 3.14 into the constant PI
4. Area = PI * Radius ** 2 #Calculating area using Area $\leftarrow$ PI * Radius * Radius
5. Circumference = 2 * PI * Radius #Calculating the circumference
6. print("Area of a circle =", Area, "\nCircumference of a circle =", Circumference)

Output

Enter the radius of a circle

1.2

Area of a circle= 4.5216

Circumference of a circle = 7.536