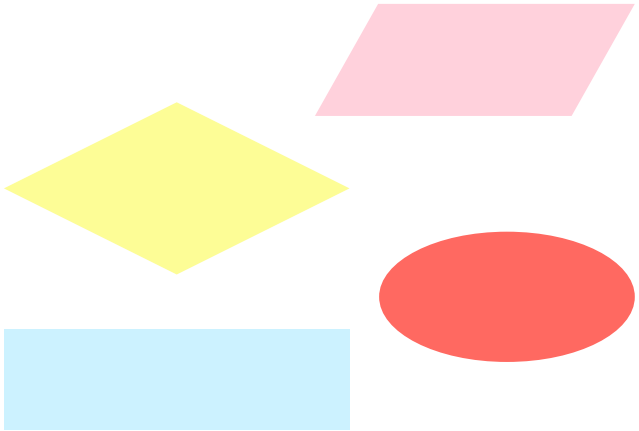
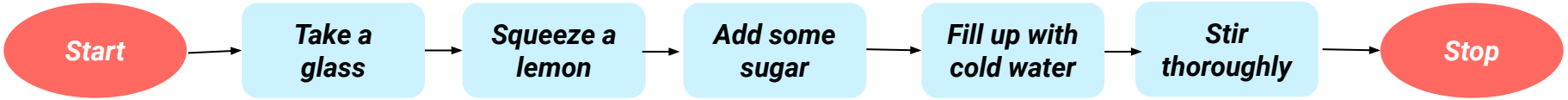


INTRODUCTION TO FLOWCHARTS

PROGRAMMERS & COMPUTERS

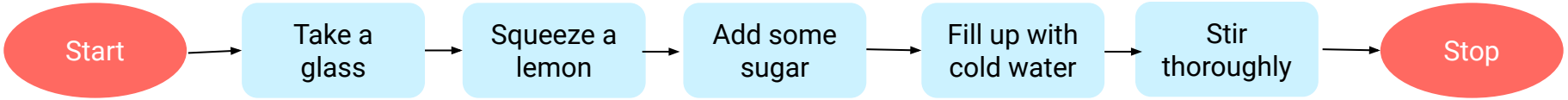
PLANNING BEFORE EXECUTING

What do you think this diagram is about?



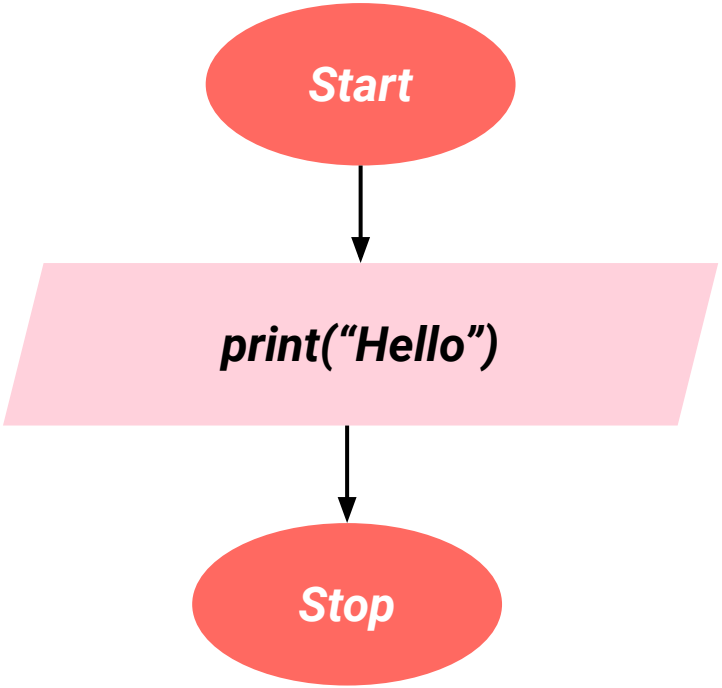
Flowchart 1

What do you think this diagram is about?



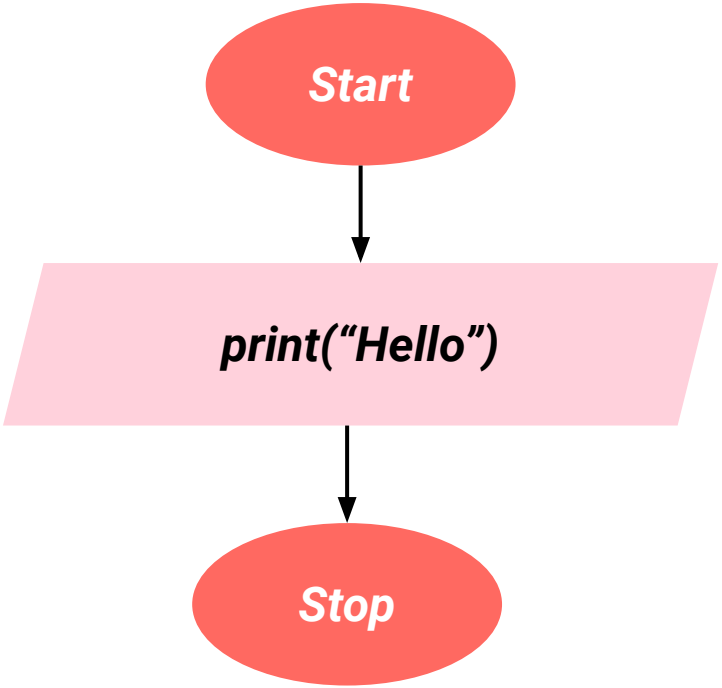
This diagram tells us in clear and graphical steps, how to make lemonade.

It clearly mentions where to **start**, where to **stop**, thus taking us through the **complete process** of doing this task.



Observe the given flowchart, what do you think will display on screen if we make a program out of it and run?

HINT *- Think what the word 'print' means.*



Observe the given flowchart, what do you think will display on screen if we make a program out of it and run?

HINT *- Think what the word 'print' means.*

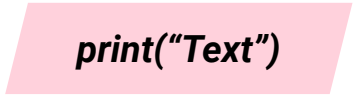
If we run this flowchart, we will get "Hello" printed(displayed) on the screen.

This program is using three different steps. What is the shape and purpose of each shape?

Draw the Shape	Name	Purpose

Complete the table in your notebook

This program is using three different steps. What is the shape and purpose of each shape?

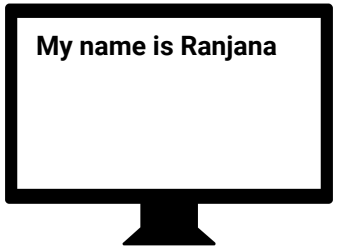
Draw the Shape	Name	Purpose
	Start Box	The START box tells that the computer is ready and will execute whatever instructions you tell it.
	Stop Box	STOP box tells the computer that the program has ended and it doesn't have to wait for any more instructions to execute.
	Output Box	Output box is used whenever something needs to be printed on the screen. It is denoted using a parallelogram.

The print(“ “) command

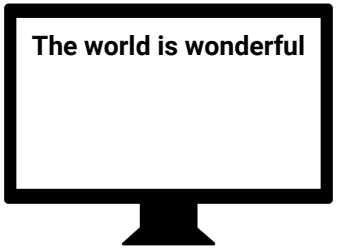
print(“ ”) is an instruction that is used whenever we want the computer to display text/numbers on the screen.

Anything that you write between “ “ will get printed on the screen as it is.

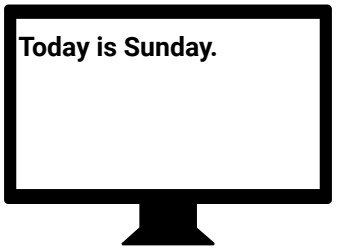
print(“My name is Ranjana“)



print(“The world is wonderful“)



_____ ??



The print(“ “) command

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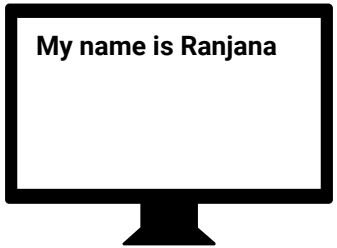
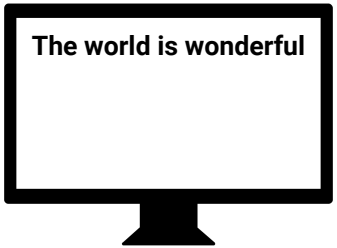
Anything that you write between “ “ will get printed on the screen as it is.

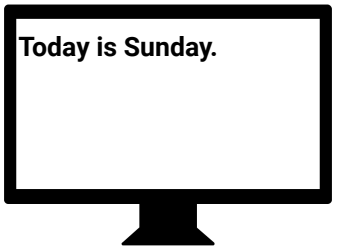
print(“My name is Ranjana“)

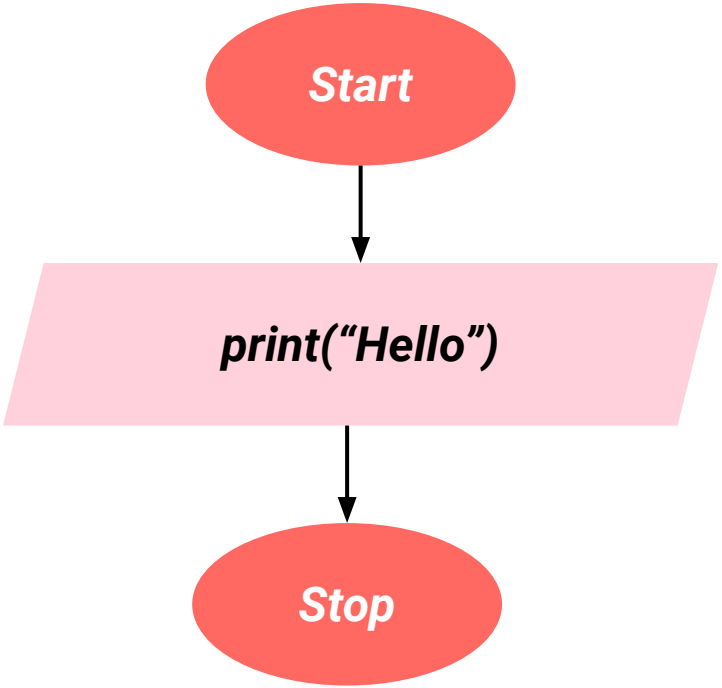


print(“The world is wonderful“)



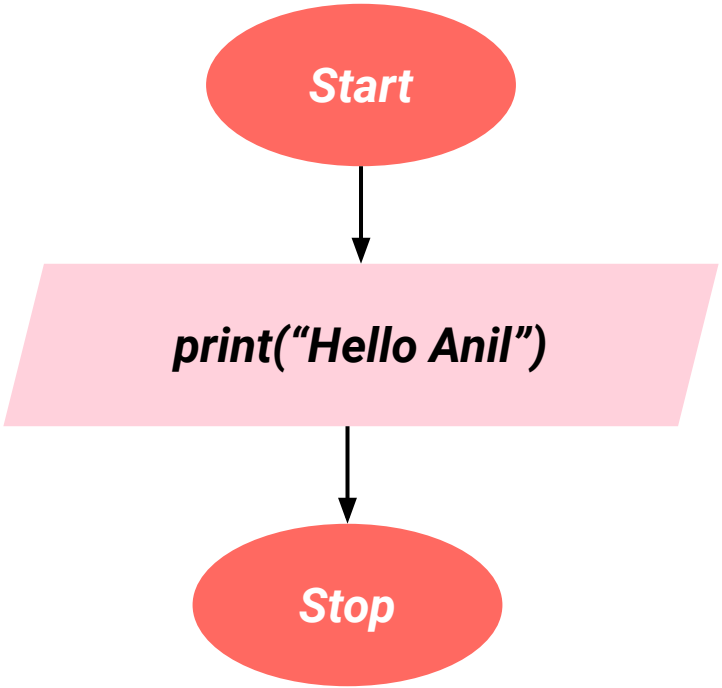
print(“Today is Sunday”)





Question 1

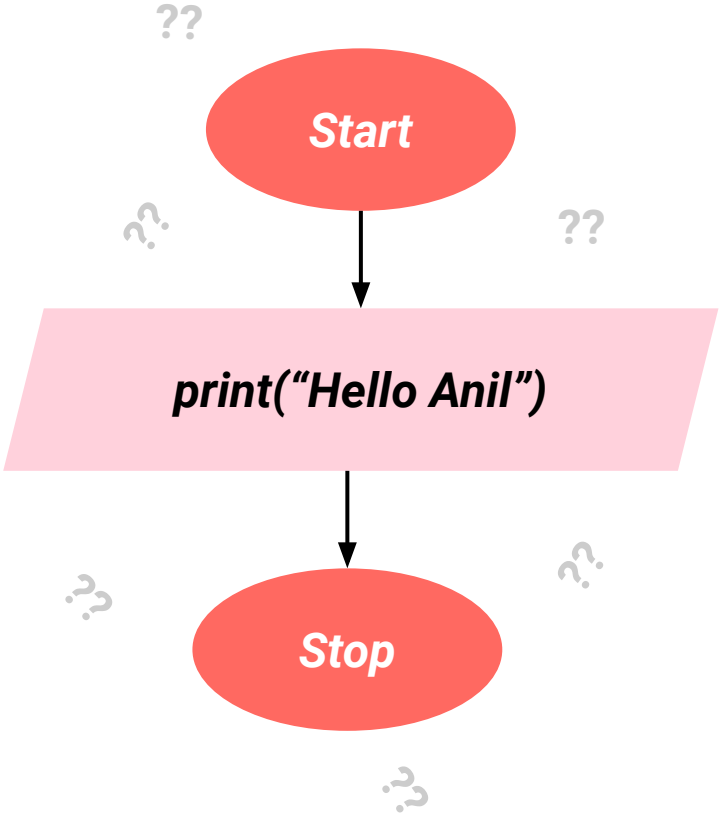
Modify the given flowchart to print "Hello Anil" on the screen


Start
print("Hello Anil")
Stop

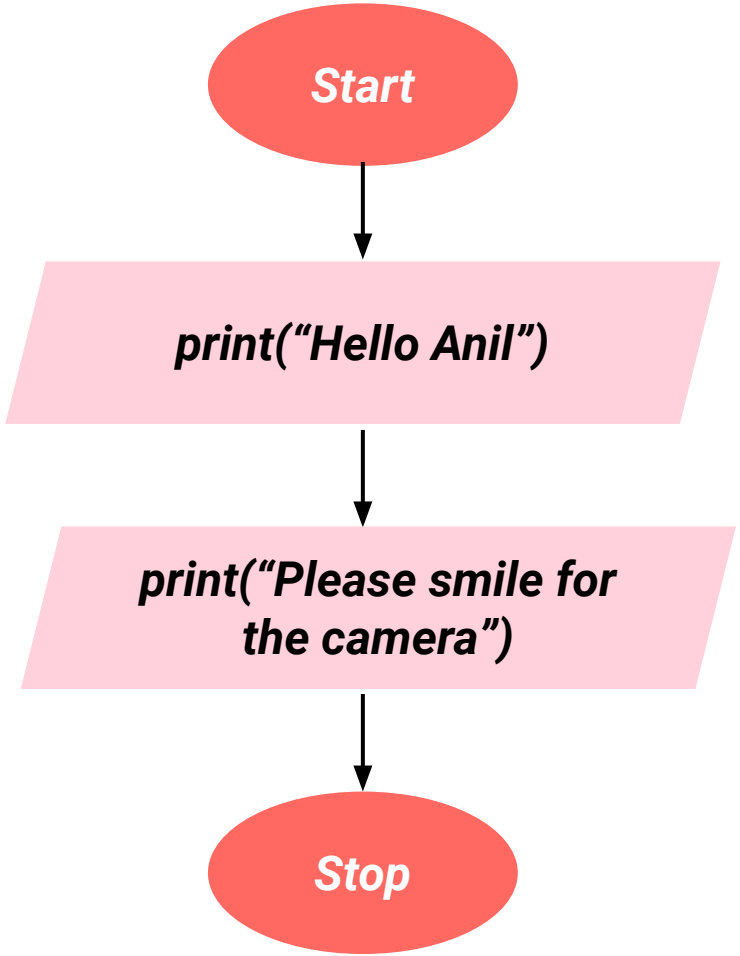
Note *- Sentences are on two different lines*

Modify the given flowchart to print the following Output on the screen

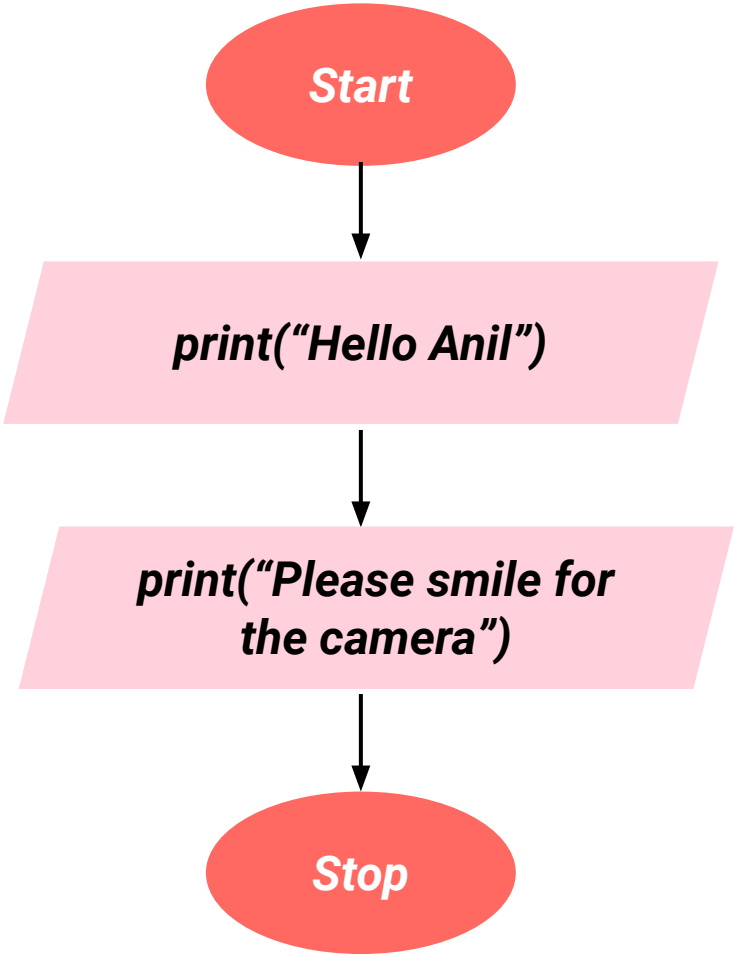
Question 2



Answer -

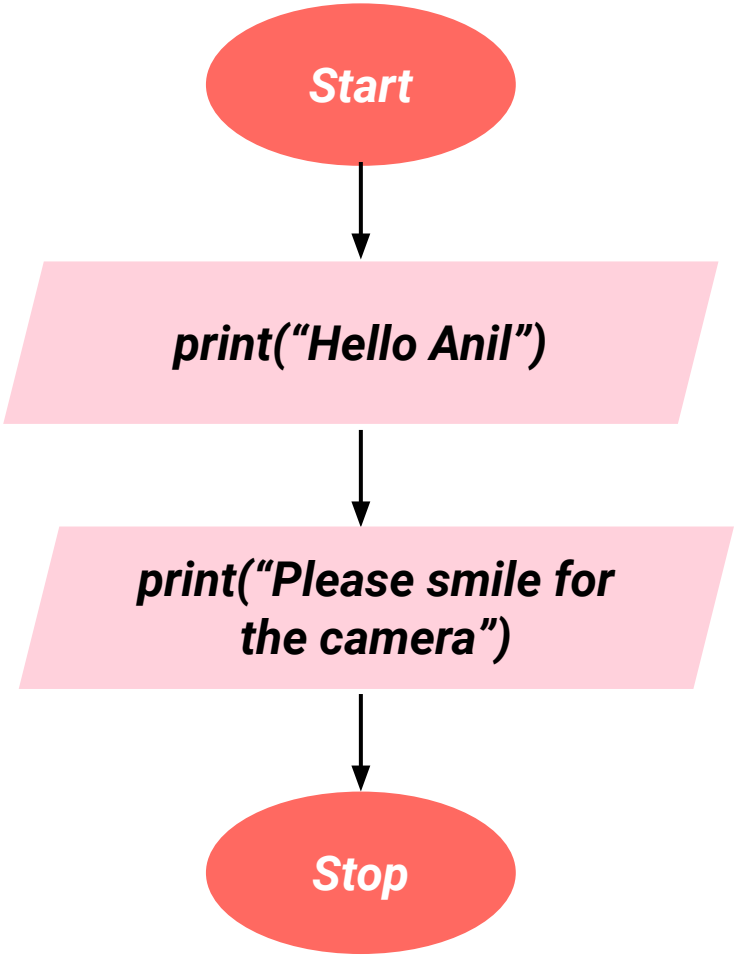

Start
print(“Hello Anil”)
print(“Please smile for the camera”)
Stop

Why did we use two different print boxes instead of writing all text in just one?

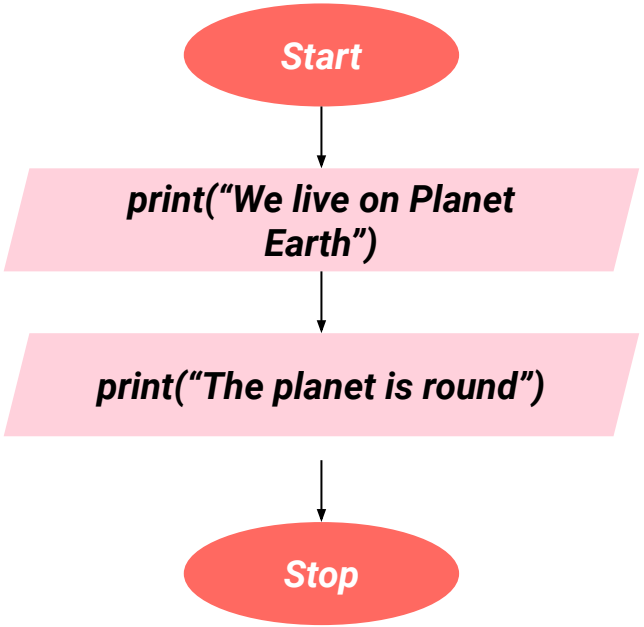


Why did we use two different print boxes instead of writing all text in just one?

If we used only one OUTPUT BOX, everything would print only on one line.



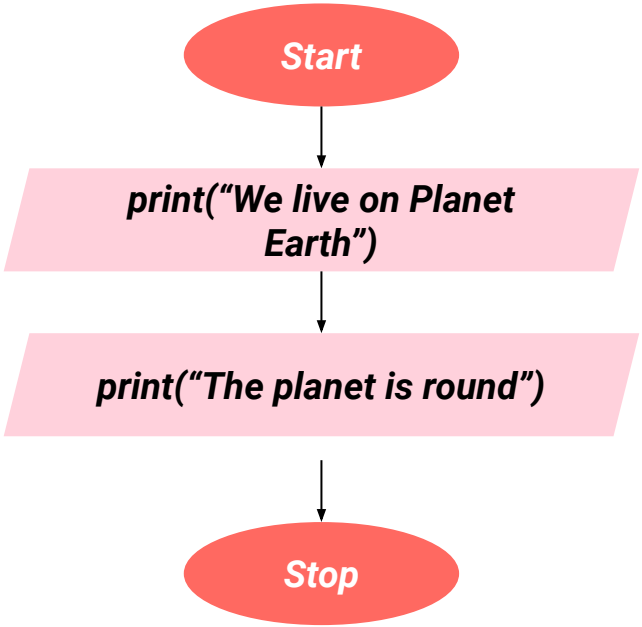
PRACTICE



Question 3

ASK - Why do you think the output of this flowchart is -
We live on Planet Earth
The planet is round
and not -
The planet is round
We live on Planet Earth

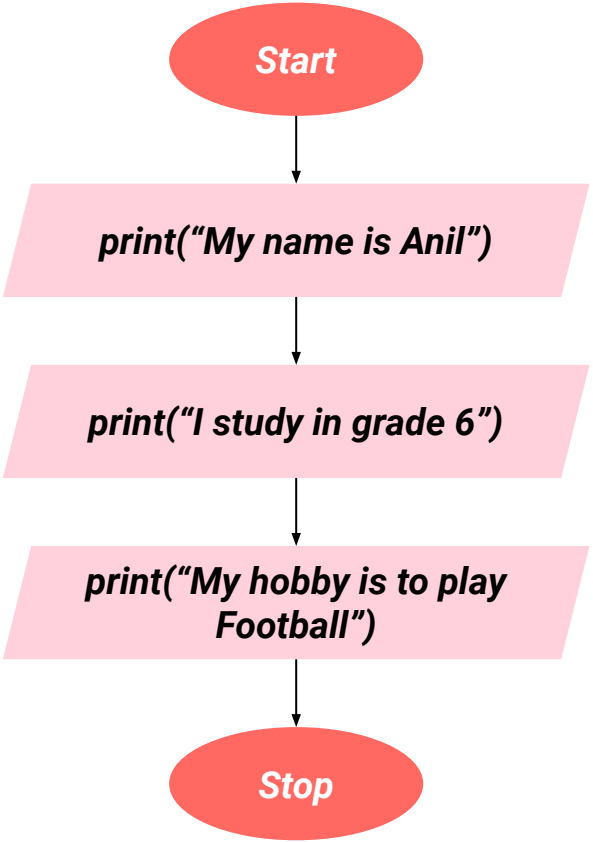
PRACTICE



ASK - Why do you think the output of this flowchart is -
We live on Planet Earth
The planet is round
and not -
The planet is round
We live on Planet Earth

Computers will do things **EXACTLY** how we design them. They will execute instructions in the sequence that we have given them.

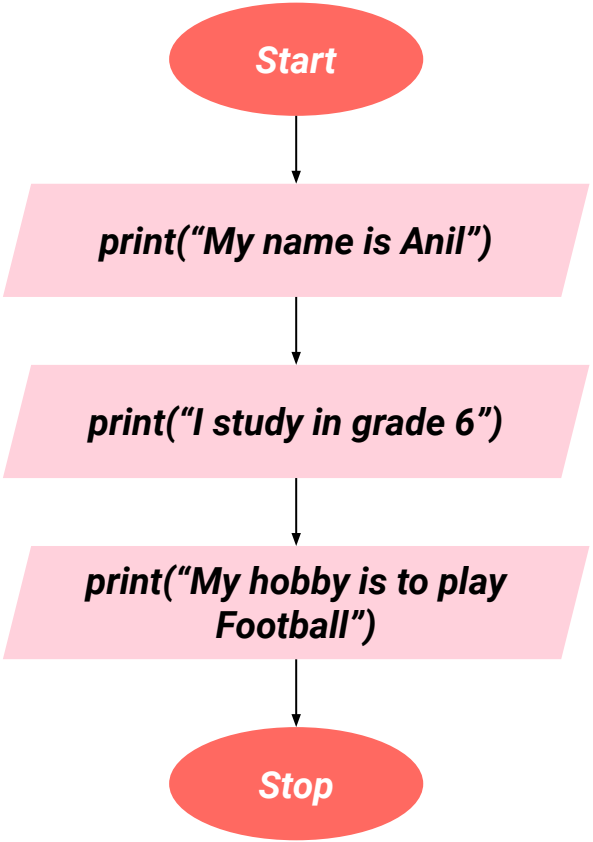
PRACTICE



Question 4

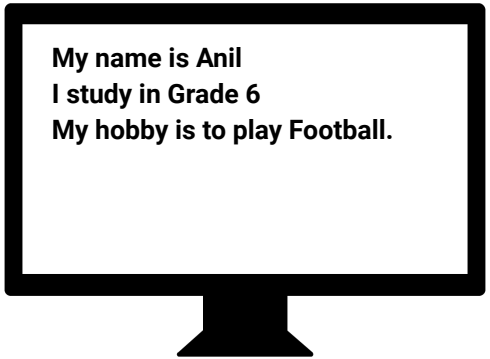
What will be the output of the following flowchart?

PRACTICE



Question 4

What will be the output of the following flowchart?



SUMMARY

Now we have learnt how to design flowcharts to print different elements on the screen, let us summarise by answering the questions below -

Q. Is it possible to have 10 Output boxes one after the other printing 10 different sentences?

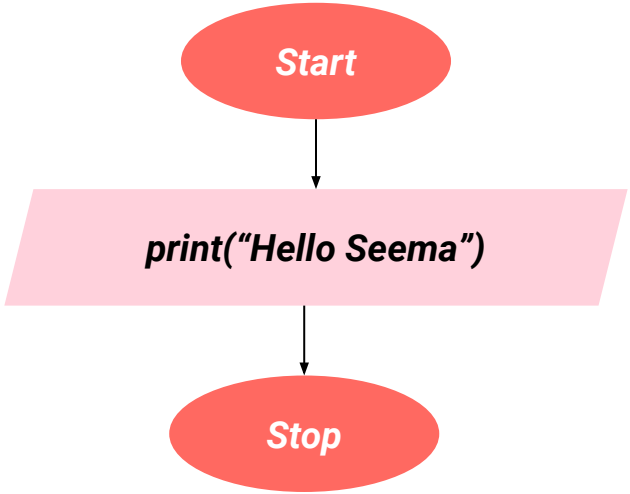
Q. A computer flowchart should always begin with a _____ box

Q. A computer flowchart should always end with a _____ box.

NEXT UP...

Draw a flowchart that says hello to the user along with their name. The name of the user is Seema, it prints “Hello Seema”

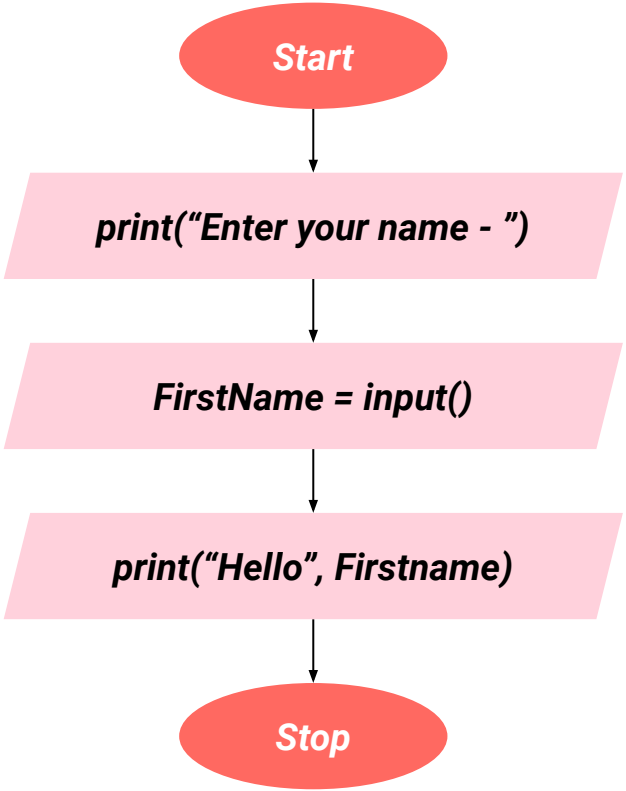
Answer -



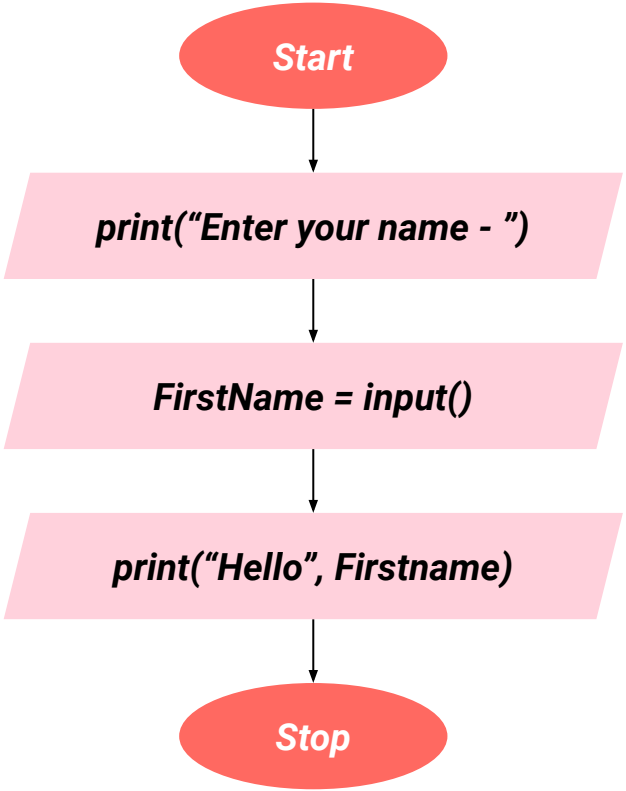
But we have a problem here. If SOMEONE ELSE runs this program, it will still print HELLO SEEMA (and not their name)

If Anil runs this program, it will still print Hello Seema.

Can you think of more tasks where a user may have to enter data through a keyboard for a computer to perform a task?

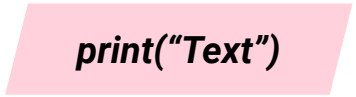


In which box are we taking an input from the user?

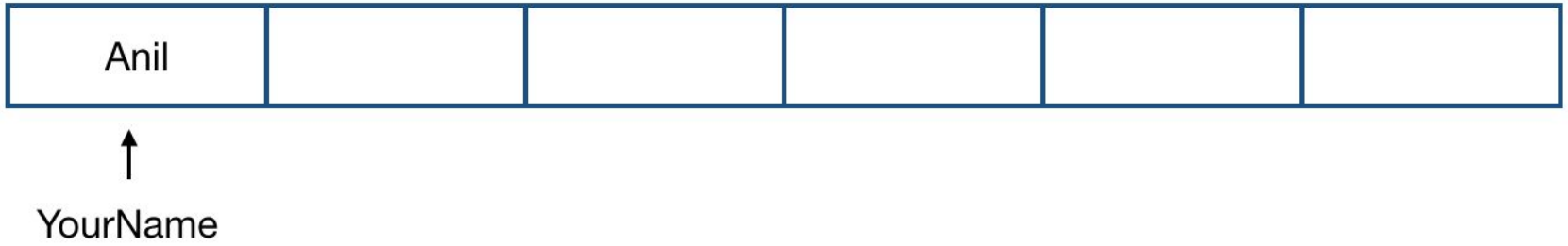


In which box are we taking an input from the user?

*We are taking an input from the user in the 3rd box. It is **Parallelogram** in shape.*

Draw the Shape	Name	Purpose
	Start Box	The START box tells that the computer is ready and will execute whatever instructions you tell it.
	Stop Box	STOP box tells the computer that the program has ended and it doesn't have to wait for any more instructions to execute.
	Output Box	Output box is used whenever something needs to be printed on the screen. It is denoted using a parallelogram.
	Input Box	To accept a value from the user and work on that.

A computer's memory



MEMORY DIAGRAM

VARIABLES

User enters data → Data gets stored in piece of memory → This piece needs to be given a name/label so that we can use it.

It's similar to why do we name humans. *So that we can call them!!*

NAMING VARIABLES

Rules to name Variables

They're Case Sensitive.

Can use numbers but they have to start with a letter

Underscore Symbol is allowed _

Which of the following names are Valid -

homework_3

35_RollNo

SchoolName

!!Hello!!

NAMING VARIABLES

Rules to name Variables

They're Case Sensitive.

Can use numbers but they have to start with a letter.

Underscore Symbol is allowed _

Which of the following names are Valid -

homework_3 ✓ **35_RollNo** ✗ **SchoolName** ✓ **!!Hello!!** ✗

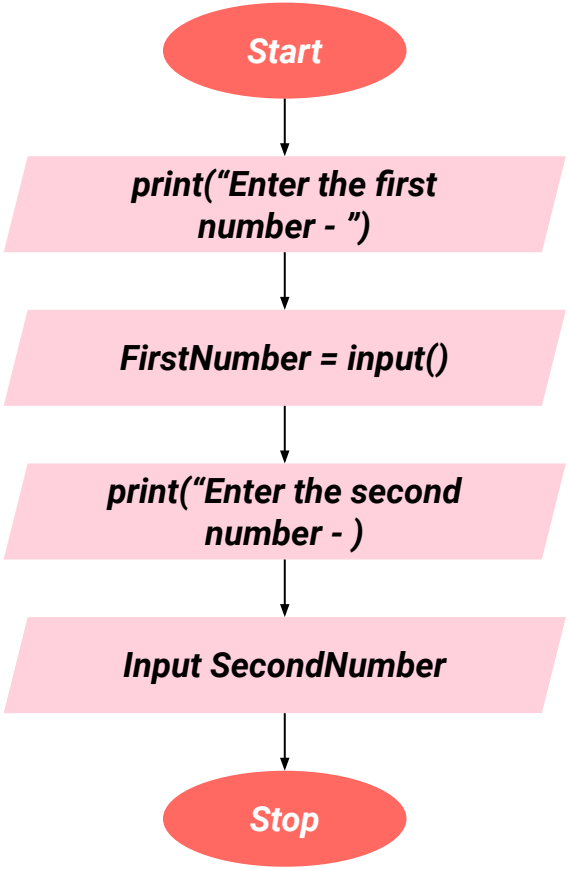
PRINTING VARIABLES

Printing text - ***print (“Your City is - “)***

Printing variables - ***print (YourCityName)***

Printing variables+text - ***print (“Your City is - “ , YourCityName)***

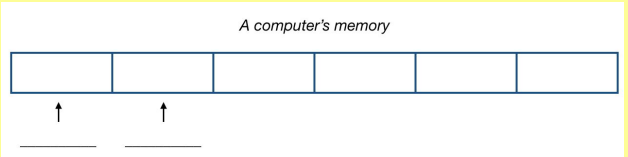
PRACTICE

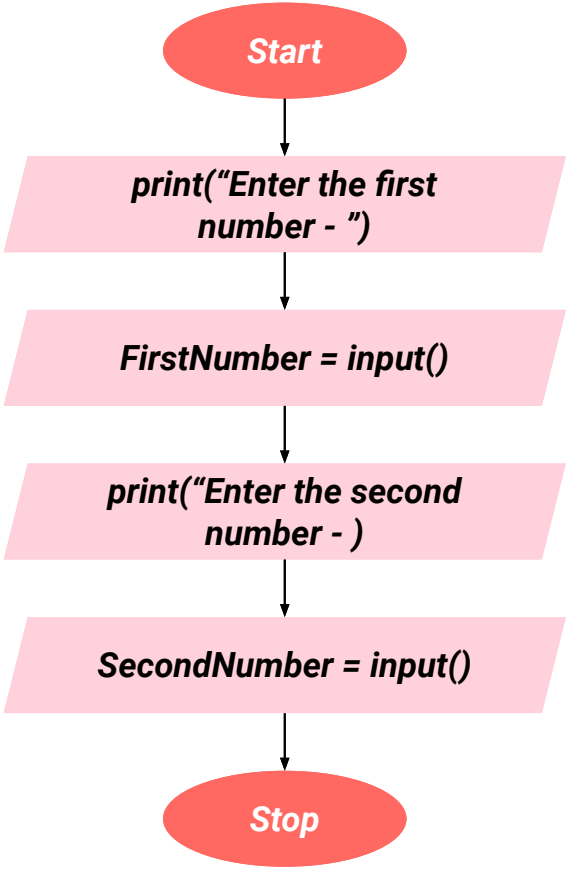


Question 5

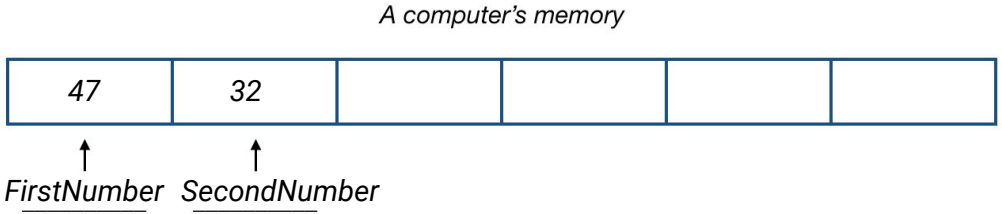
What are the two variables in which we are storing the two numbers a user will enter?

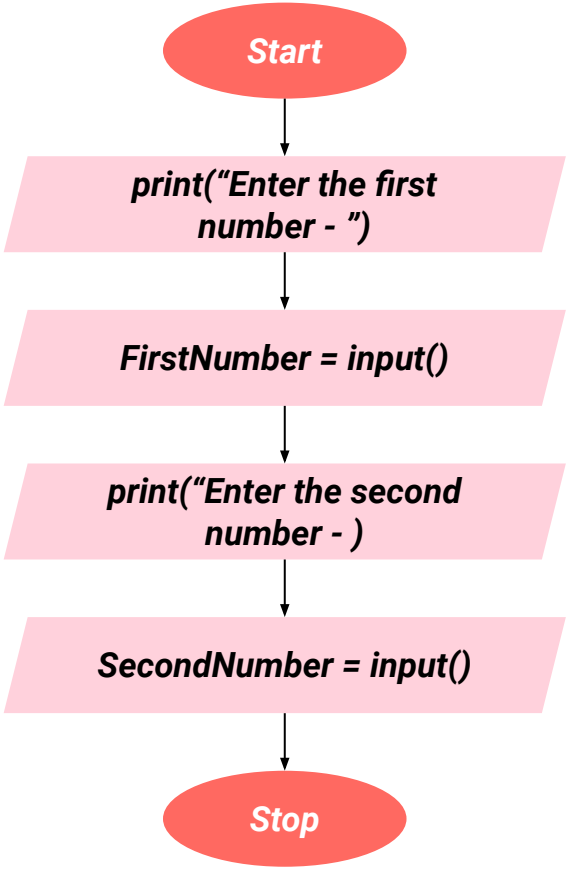
Let's say a user enters 47 and 32. Can you complete the given memory diagram based on these details?



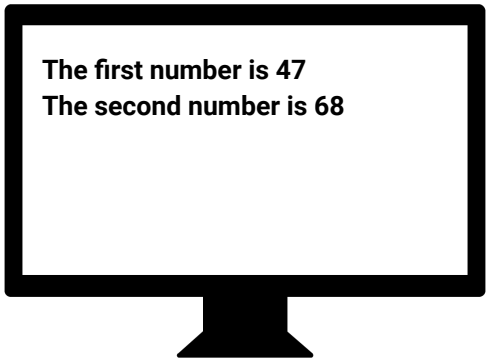


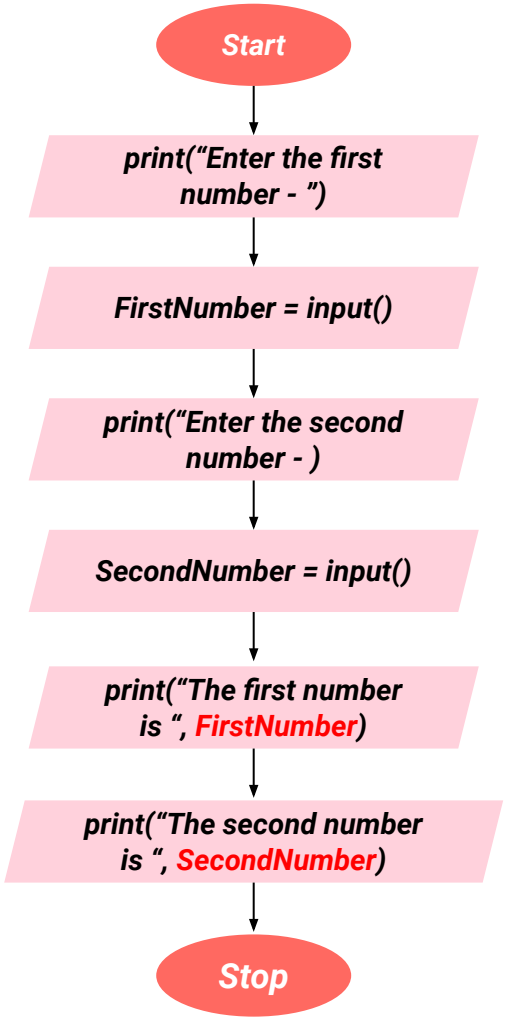
The two variables in this flowchart are FIrstNumber and SecondNumber





In the above flowchart, we want to display value of the variable on the screen -





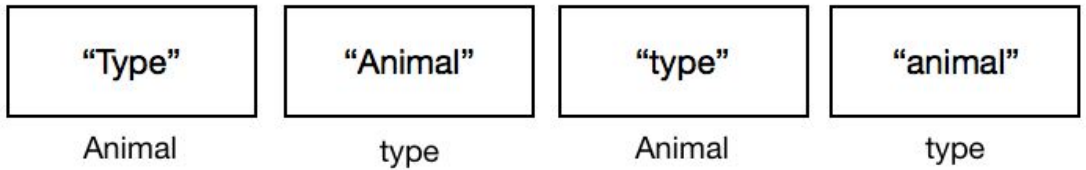
Answer - The flowchart will be as given...

PRACTICE

type = input()

Question 6

In a flowchart, we are taking input from the user and storing it in a variable called - type. The user enters Animal as an input. Which of the following options is the correct way of data storage in the memory?



PRACTICE

type = input()

Question 6

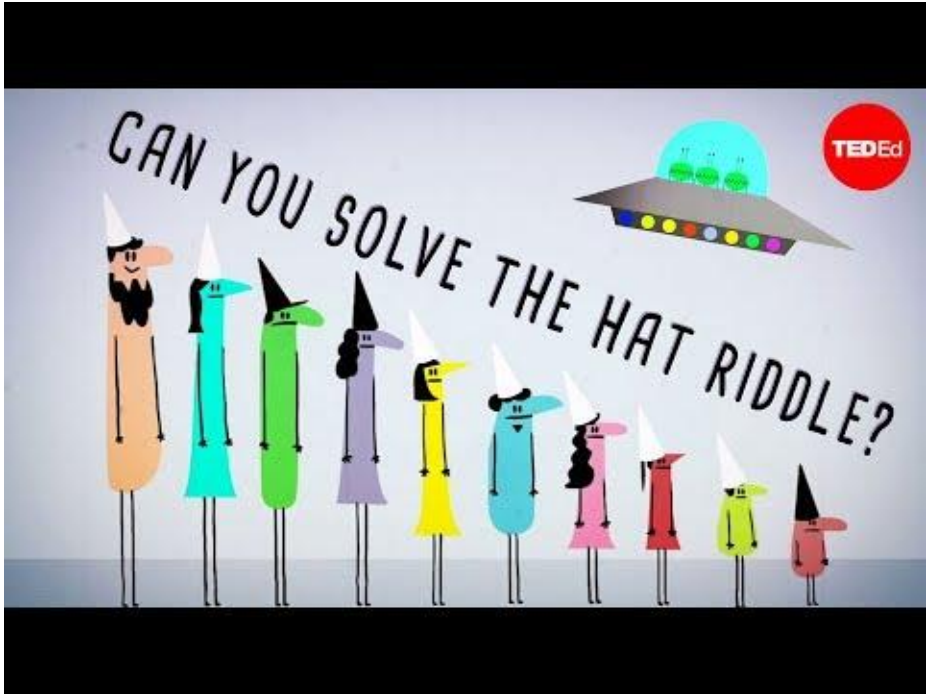
In a flowchart, we are taking input from the user and storing it in a variable called - type. The user enters Animal as an input. Which of the following options is the correct way of data storage in the memory?

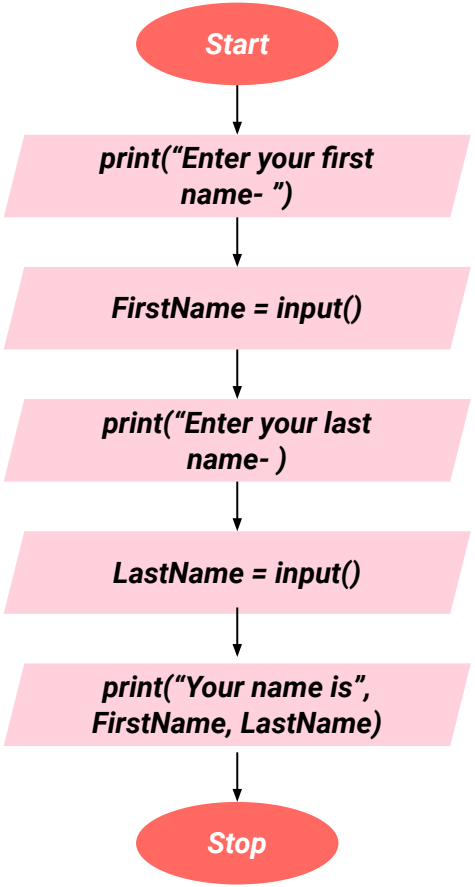
PUZZLE OF THE DAY

A Man wants to bring a Lion, a goat, and Grass across the river. The boat is tiny and can only carry one passenger along with the man at a time. If he leaves the Lion and the goat alone together, the Lion will eat the goat. If he leaves the goat and the Grass alone together, the goat will eat the Grass.

How can he bring all three safely across the river?

PUZZLE OF THE DAY





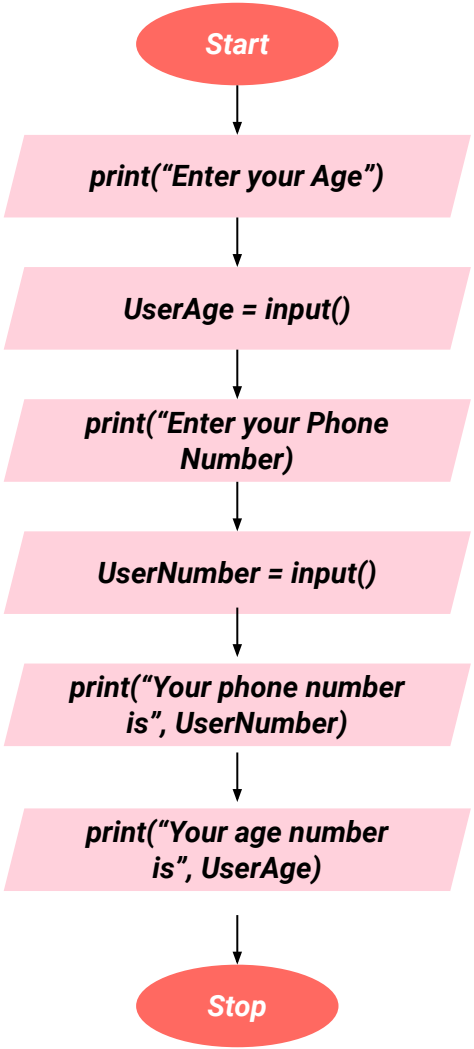
INDEPENDENT PRACTICE

Question 7

Something is wrong in the output of the given flowchart. Can you identify what it is and note it in your books?

Output -

Enter your first name - **Anil**
Enter your Last name - **Shukla**
Your name is Shukla Anil.



INDEPENDENT PRACTICE

Question 8

Something is wrong in the output of the given flowchart. Can you identify what it is and note it in your books?

Output -

Enter your age - -> 25
Enter your phone no. - -> 12345678
Your phone number is 25
Your age is 12345678

INDEPENDENT PRACTICE

Question 9

Arrange the following shapes in the correct order to get the required output.

Output -

Enter your Day of birth - **19**
Enter your Month of Birth - **July**
Enter your year of birth - **2000**
Your birthdate is - 19 July 2000