



DESIGN AND TECHNOLOGY

 python

7

1 - Write code in a new python to print numbers 1 through 7 using command **For** and command **While** ?

Write a suitable **comment** in line number 1 .

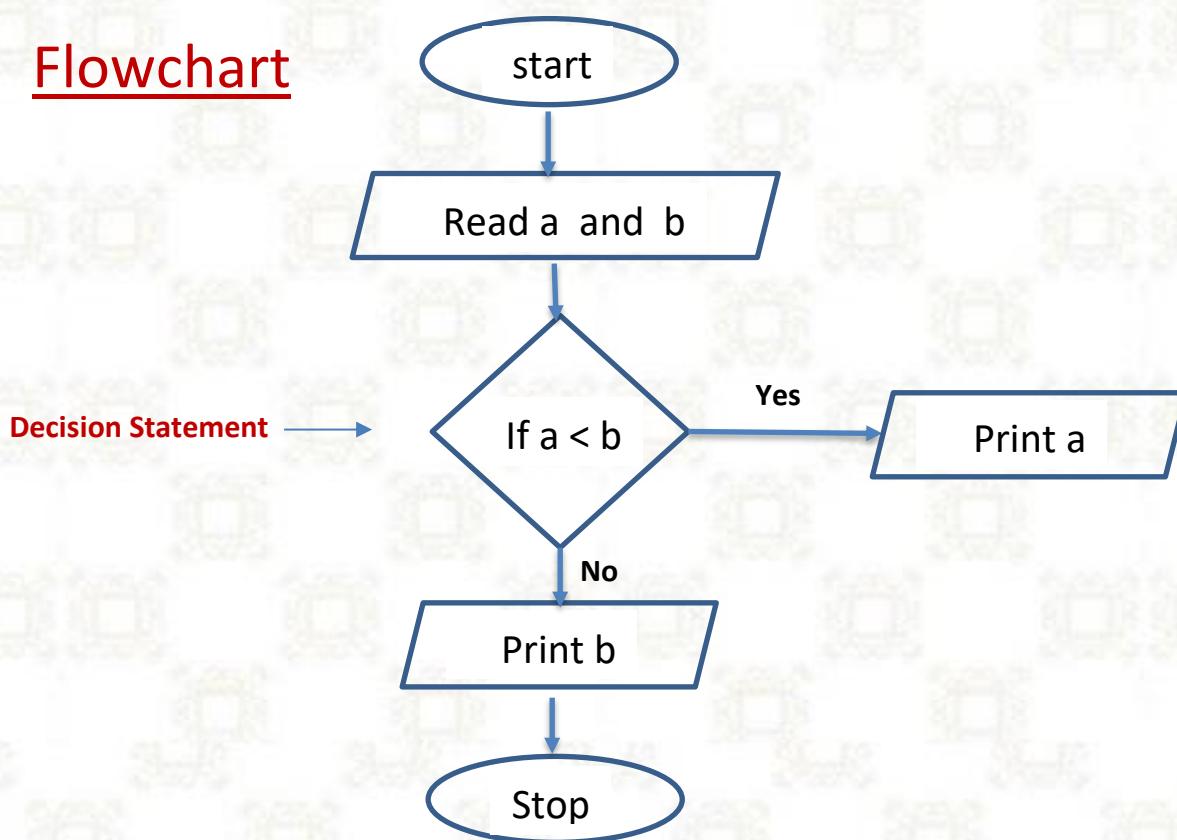
```
#This program uses a for loop to count numbers from 1 to 7
for n in range (1,8,1):
    print(n)
```

```
#This program uses a while loop to count numbers from 1 to 7
n=1
while (n<8):
    print(n)
    n=n+1
```

2 - Write code in a new python to Print the **smaller** of two numbers ? Write a suitable comment in line 1 ?

```
#to find the smaller of two numbers
a=input("Enter first number :")
b=input("Enter second number :")
if(a<b):
    print("a is the smaller number")
else:
    print ("b is the smaller number")
```

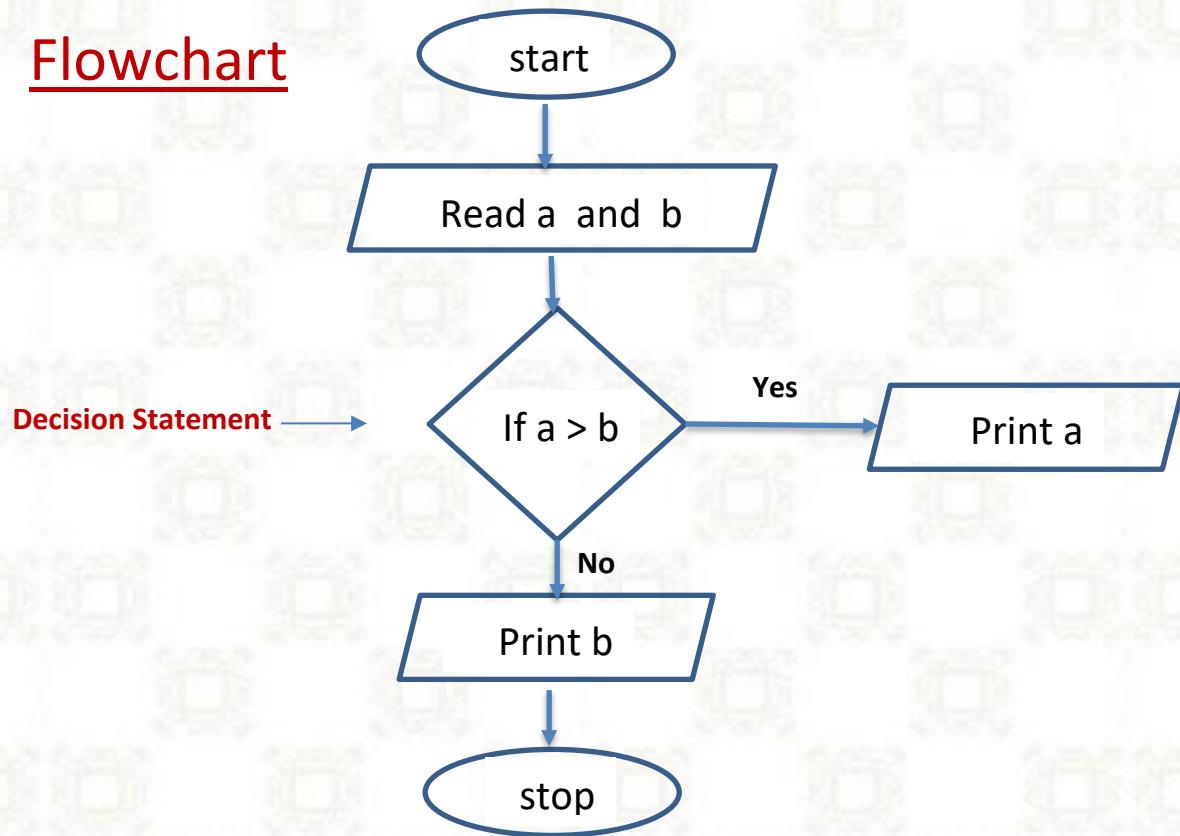
Flowchart



3 - Write code in a new python to Print the **Largest** of two numbers ? Write a suitable comment in line 1 ?

```
#to find the largest of two numbers
a=input("Enter first number :")
b=input("Enter second number :")
if(a>b):
    print("a is the largest number")
else:
    print ("b is the largest number")
```

Flowchart



4 - Write code in a new python (Using for loop) to calculate and print the age and year of the user for the next 5 years ? Write a suitable comment in line 5 ?

```
age = input("Enter your age:")  
age = int(age)  
year = input("Enter the current year:")  
year = int(year)  
#This is the loop to calculate and print their  
age and year for the next 5 years  
for num in range(1, 6, 1):  
    age = age + 1  
    year = year + 1  
    print("year is ", year, "age is ", age)
```

5 – The program in Task 4 can also be written using a while loop .

```
age = input("Enter your age : ")  
age = int(age)  
year = input("Enter the current year : ")  
year = int(year)  
count = 1  
while (count < 6):  
    age = age + 1  
    year = year + 1  
    print("year is ", year, "age is ", age)  
    count = count + 1
```

6 - Write code in a new python (Using for loop) to count even numbers from 0 to 20 ? Write a suitable comment in line 1 ?

```
#This program uses a for loop to count even numbers from 0 to 20
for num in range (0,21,2):
    print(num)
```

7 – The program in Task 6 can also be written using a while loop .

```
#This program uses a for loop to count even numbers from 0 to 20
num=0
while (num<21):
    print(num)
    num=num+2
```

8 - Write code in a new python (Using for loop) to count even numbers from 1 to 20 ? Write a suitable comment in line 1 ?

```
weather = input("Enter the weather :")
if (weather == "sunny"):
    print ("go to the beach")
elif (weather == "cloudy"):
    print ("go to the cinema")
else:
    print ("stay at home")
```

9 - Write code in a new python to ask if the users speaks Arabic or No but also allow them to say a little, finally we will tell them if they type anything else we will tell them they did not answer the question. ? Write a suitable comment in line 1,2,3,4 ?

```
#YES : MARHABA
#NO : YOU DON'T ! YOU SHOULD LEARN ARABIC
#A LITTLE : A LITTLE IS A GOOD START
#ANYTHING : YOU DID NOT ANSWER THE QUESTION
Answer=input ("do you speak arabic ? Type yes , no or a little .")
if Answer == "yes" :
    print ("marhaba")
elif Answer=="no":
    print ("you don't! you should learn arabic")
elif Answer=="a little":
    print ("a little is a good start")
else:
    print ("you did not answer the question")
```

10 - Create a program to solve this problem. Hamad wants to carpet his new room with green carpet . Create a program that will ask him for the two dimensions of a room (length and width) and then calculate the area of the room, (length x width) ? Write a suitable comment in line 1 ?

```
#This program calculate the area of the room
L=input ("What is the length of the room?")
W=input("What is the width of the room?")
A=int(L)*int(W)
print("The total area of the room is :" , A)
```

11- What will be the correct output for this for loop?

```
for i in range(0, 4):  
    print(i)
```

- A) 1, 2, 3
- B) 0, 1, 2, 3
- C) 0, 1, 2, 3, 4

12 - Write down the three variables used in this block of code

```
firstNumber = 1  
firstNumber = firstNumber * 3  
secondNumber = 3  
secondNumber = secondNumber - 2  
finalsum = firstNumber + secondNumber  
print(finalsum)
```

```
number = input("Type a number from 0 to 10")
```

```
if number > 5:  
    print("Number is greater than 5")  
  
elif number == 5:  
    print("Number is 5")  
  
else:  
    print("Number is less than 5")
```

13 -What is the output for the above code when the:

- A) number is 10?
- B) number is 0?
- C) number is 5?

(A) _____
(B) _____
(C) _____

14 - Name any three Python functions.

15 - Match the terms with its explanations. Write the matching letter in the correct box.

1. *	Not equal to	A
2. >=	Multiply	B
3. !=	Greater than or equal to	C

16 - Which of these will correctly appear as a **comment** in Python?

- A) == This is a line of code
- B) % This is a line of code
- C) # This is a line of code

17 - Create a program to print the multiplication table as the user chooses.

```
table=int(input("Which times table do you want?"))
for i in range(0,12):
    print (i, "X", table, " = ",i*table)
```

* Print Function

Command	Function	Example /code	output
<code>print(" ")</code>	To print /output what written inside brackets	<code>print("hello")</code>	hello
<code>print()</code>	To print the result of operation	<code>print(5+3)</code>	8
		<code>print(10-3)</code>	7
		<code>print(15/5)</code>	3
		<code>print(4*3)</code>	12
<code>print(" ",)</code>	To print the combination of text and numbers	<code>print("sum=", 2+1)</code>	Sum= 3

* Match the terms with its explanations. Write the matching letter in the correct box.

Debugging	A	Finding the problems in code and removing the bugs.	A
Function	C	when you try and run the program and it will not run spelling mistake, or missed a character out	B
Output	D	python knows what <code>print()</code> means and does display on the screen what written in between brackets	C
String	F	When something is processed by the computer and returned back	D
Variable	E	box that you can save information inside and to store data that you might need saving or to refer to later in a program.	E
<code>Input()</code>	H	is a data type used in programming and to represent text .	F
Float	G	is a decimal number such as 0.8	G
integer	I	built in function that it can be given a string which it sends to the screen	H
while loop	K	is a whole number such as 5.	I
for loop	L	You can use one or more loops inside any another loop.	J
		Repeats a statement or group of statements while a given condition is TRUE. It tests the condition before executing the loop body.	K
		Executes a sequence of statements defined number of times and abbreviates the code that manages the loop variable.	L

*** Choose and circle the correct answer – A, B, C or D.**

1. What is a string?

- A) A pseudocode
- B) A comparative operator
- C) A series of characters**
- D) A series of numbers

2. What is an algorithm?

- A) A sequence of instructions**
- B) A box to store instructions
- C) A box to store instructions
- D) A build in function

3. What does the operator * do?

- A) Subtract
- B) Multiply**
- C) Divide
- D) Modulus

4. What does the operator != means?

- A) Assign value
- B) Not assign
- C) Equal
- D) Not Equal**

5. Anything in speech marks " " is treated as:

- A) Float Number
- B) Integer Number
- C) text**
- D) Array

Which statement will check if a is less than b?

- if a \geq b
- if a > b
- if a \leq b:
- if (a < b)
- if a < b
- if a < b: ✓
- if a less than b:

Which statement will check if a is equal to b?

- if a equals b:
- if a === b
- if a = b:
- if a = b
- if a == b
- if a == b: ✓
- if a === b: