

12th COMPUTER SCIENCE

IMPORTANT PROGRAMS



2024-2025



1) Program to check the age and print whether eligible for voting.

```
x=int(input("Enter your age:"))
if x>=18:
print("You are eligible for voting")
```

OUTPUT 1:

```
Enter your age: 34
You are eligible for voting
```

OUTPUT 2:

```
Enter your age:16
```

2) Program to check if the accepted number odd or even

```
a=int(input("Enter any number:"))
if a%2==0:
    print(a,"is an even number")
else:
    print(a,"is an odd number")
```

OUTPUT1:

```
Enter any number: 56
56 is an even number
```

OUTPUT 2:

```
Enter any number:67
67 is an odd number
```

3) Program to illustrate the use of 'in' and 'not in' in if statement

```
ch=input("Enter a character:")
if ch in('a','A','e','E','i','I','o','O','u','U'):
    print(ch,' is a vowel')
if ch notin('a','b','c'):
    print(ch,the letter is not a/b/c')
```

OUTPUT 1:

```
Enter a character: e
e is a vowel
```

OUTPUT 2:

```
Enter a character : x
x the letter is not a/b/c
```

4) Program to illustrate the use of while loop to print all numbers from 10 to 15

```
i=10
while(i<=15):
    print(i,end='\t')
    i=i+1
```

OUTPUT:

10 11 12 13 14 15

5) Write the output for the given program?

```
for x in (1,2,3,4,5):  
    print("Hello World")
```

OUTPUT:

Hello World Hello World Hello World Hello World Hello World

6) Write the output for the given program?

```
str1=input("Enter a string:")  
index=0  
for i in str1:  
    print("Subscript[" ,index,"]:" ,i)  
    index + = 1
```

OUTPUT

Enter a string: welcome

Subscript [0] : w

Subscript [1] : e

Subscript [2] : l

Subscript [3] : c

Subscript [4] : o

Subscript [5] : m

Subscript [6] : e

7) Write the output for the given program?

```
>>>str1="Welcome to learn Python"  
>>>print(str1[10:16])  
>>>print(str1[10:16:4])  
>>>print(str1[10:16:2])  
>>>print(str1[::3])
```

OUTPUT:

Learn

r

er

Wceoenyo

8) Write the output for the given program?

```
str1="ABCDEFGH"  
str2="ate"foriinstr1:  
print((i+str2),end='\t')
```

OUTPUT:

Aate Bate Cate Date Eate Fate Gate Hate

9) Write a program using for loop to print the following pattern.

```
1
12
123
1234
12345
```

OUTPUT:

```
i=1
while(i<=6):
    for j in range (1,i):
        print(j,end='\t')
    print(end='\n')
    i +=1
```

10) Write the output for the given program?

```
for word in "Jump Statement":
if word == "e":
    break
    print(word,end="")
```

OUTPUT:

Jump Stat

11) Write the output for the given program?

```
for word in "Jump Statement":
    if word == "e":
        continue
    print(word,end="")
print("\nEnd of theprogram")
```

OUTPUT:

Jump Statmnt
End of the program

12) Write a program using for loop to print the following pattern.

```
*****
****
***
**
*
```

CODE:

```
for i in range(5,0,-1):
    for j in range(5,0,-1):
        print('*',end=' ')
        i+=1
    print('\n')
```

13) Write the output for the given program?

```
str1='*'
i=1
while i<=5:
    print(str1*i)
    i+=1
```

OUTPUT

```
*
```

```
**
```

```
***
```

```
****
```

```
*****
```

14) Write the output for the given program?

```
Marks=[10,23,41,75]
i=0
while i<4:
    print(Marks[i])
    i = i + 1
```

OUTPUT:

```
10
23
41
75
```

15) Write the output for the given program?

```
Marks=[10,23,41,75]
i=-1
while i>=-4:
    print(Marks[i])
    i = i + -1
```

OUTPUT

```
75
41
23
10
```

16) Which of the following is a normal function definition and which is recursive function definition.

i) let sum x y:
return x+y

Normal Function

ii) let disp:
print 'welcome'

Normal Function

iii) let rec sum num:

```
if(num!=0)
then
return num+sum(num-1)
else
return num
```

Recursive Function

17) Identify in the following program

let rec gcd a b:=

if b<>0 then gcd b(a mod b) else return a

i) Name of the function

gcd

ii) Identify the statement which tells it is a recursive function

let rec gcd ab:=

iii) Name of the argument variable

“a” and “b”

iv) Statement which invoke the function recursively

gcd b(a mod b)

v) Statement which terminates the recursion

return a

18) Identify which of the following are constructors and selectors?

- | | |
|--|-----------------------|
| (a) N1:=number() | -- Constructor |
| (b) accetnum(n1) | -- Selector |
| (c) displaynum(n1) | -- Selector |
| (d) eval(a/b) | -- Selector |
| (e) x,y:=makeslope(m),
makeslope(n) | -- Constructor |
| (f) display() | -- Selector |

19) Identify which of the following are List, Tuple and class?

- | | |
|---------------------------------------|-----------------|
| (a) arr[1,2,34] | -- List |
| b) arr(1,2,34) | -- Tuple |
| (c) student[rno,name,mark] | -- Class |
| (d) day:=(‘sun’,‘mon’,‘tue’,‘wed’) | -- Tuple |
| (e) x:=[2,5,6.5,[5,6], 8.2] | -- List |
| (f) employee[eno,ename,esal,eaddress] | -- Class |

20) Write the syntax of Ternary or conditional operator.

SYNTAX:

variableName=[on_true]if[Testexpression]else[on_false]

21) Write the output for the given program?

i=1

while True:

```
if i%3==0:  
    break  
print(i,end="")
```

```
i+=1
```

OUTPUT:

```
12
```

22) Write the Syntax of if.. else statement.

```
if<condition>:  
    statements-block1  
else:  
    statements-block2
```

23) Write the Syntax of range() function.

Syntax of range ():

```
range(start,stop,[step])
```

24) Write the program to print the given pattern.

```
A  
AB  
ABC  
ABCD  
ABCDE
```

CODE:

```
for i in range(65,70):  
    for j in range(65,i+1):  
        print(chr(j),end="")  
print(end='\n')  
i+=1
```

25) Using if..else..elif statement write a suitable program to display largest of 3 numbers.

CODE:

```
x= int(input("Enter the first number:"))  
y=int(input("Enter the second number:"))  
z= int(input("Enter the third number:"))  
if(x>=y)and(x>=z):  
    biggest=x  
elif(y>=z):  
    biggest=y  
else:  
    biggest=z  
print("The biggest number is",biggest)
```

OUTPUT

```
Enter the first number: 3
```

```
Enter the second number: 6
```

Enter the third number: 4

The biggest number is 6

26) Write the Syntax of while loop?

SYNTAX:

```
while <condition>:  
    statementsblock1  
[else:  
statementsblock2]
```

27) Write the Syntax of for loop?

SYNTAX:

```
for counter_variable in sequence:  
    statements-block1  
[else:  
statements-block2]
```

28) Write the output of the given program.

```
for i in range(2,10,2):  
    print(i,end="")
```

OUTPUT:

2468

29) Write the syntax of if..elif...else statement?

SYNTAX:

```
if <condition-1>:  
    statements-block1  
elif <condition-2>:  
    statements-block2  
else:  
    statements-block n
```

30) Write a program to display all 3 digit odd numbers.

CODE:

```
for x in range(101,1000,2):  
    print(x, end='\t')
```

OUTPUT:

101 103 105 107 109 111 113 115 117 119 121 123 125 127 129 131 133 135 137 139
.....
.....
.....
.....
.....889 991 993 995 997 999

31) Write a program to display multiplication table for a given number.

Program:

```
num=int(input("Display Multiplication Table of: "))
for i in range(1,11):
    print(i,'x',num,'=',num*i)
```

OUTPUT:

Display Multiplication Table of: 2

```
1 x 2 = 2
2 x 2 = 4
3 x 2 = 6
4 x 2 = 8
5 x 2 = 10
6 x 2 = 12
7 x 2 = 14
8 x 2 = 16
9 x 2 = 18
10 x 2 = 20
```

32) Write a program to check if the year is leap year or not.

CODE:

```
n=int(input("Enter the year"))
if(n%4==0):
    print("Leap Year")
else:
    print("Not a Leap Year")
```

OUTPUT:

```
Enter the year 2012
Leap Year
```

33) Write the program to find LCM of two numbers.

CODE:

```
x=int(input("Enter first number:"))
y=int(input("Enter second number:"))
if x>y:
    min=x
else:
    min=y
while(1):
    if((min%x==0)and(min%y==0)):
        print("LCM is:",min)
        break
    min=min+1
```


OUTPUT:

Enter first number: 2
Enter second number: 3
LCM is: 6

34) Write the output for the given program?

```
def fact(n):  
    if n==0:  
        return 1  
    else:  
        return n*fact(n-1)  
print(fact(0))  
print(fact(5))
```

OUTPUT

1
120

35) Write the output for the given program?

```
str1="TamilNadu" print(str1[::-1])
```

OUTPUT

UdaNlimaT

36) Write the output for the given program?

```
str1="School"  
print(str1*3)
```

OUTPUT

School School School

```
>>>str1="Welcome"
```

```
>>>print(str1*4)
```

OUTPUT

Welcome Welcome Welcome Welcome

37) Write the syntax of string slicing/striding?

```
str[start:end]
```

38) Write the program to display the given pattern?

COMPUTER

COMPUTE

COMPUT

COMPU

COMP

COM

CO

C

CODE:

```
str="COMPUTER"  
index=len(str) for  
i in str:  
    print(str[:index])  
    index -= 1
```

39) Write the output for the given program?

```
str1 = "welcome"  
str2="toschool"  
str3=str1[:2]+str2[len(str2)-2:] print(str3)
```

OUTPUT:

weol

40) If List1=[2,4,6,8,10] what is result of print(List1[-2])? 8

41) If List=[10,20,30,40,50] what is result of List[2]=35? [10,20,35,40,50]

42) If List=[17,23,41,10] what is result of List.append(32)? [17,23,41,10,32]

43) Write the output for the given program?

```
S=[x**2 for x in range(5)]  
print(S)
```

OUTPUT: [0,1,4,9,16]

```
SetA={3,6,9},setB={1,3,9}
```

```
print(setA | setB)
```

OUTPUT: {1,3,6,9}

44) What will be the value of 'x' in the given code?

```
List1=[2,4,6,[1,3,5]]  
x=len(List1) print(x)
```

OUTPUT: 4

45) Write the syntax of creating a Tuple with n number of elements.

Syntax:

Tuple_Name=(E1,E2,E2. En) #Tuple with n number elements

Tuple_Name=E1,E2,E3..... En #Elements of a tuple without parenthesis

46) Write the output for the given program?

```
list=[2**xforxinrange(5)]  
print(list)
```

OUTPUT: [1,2,4,8,16]

47) Write the output for the given program?

```
Dict={'RollNo':12001,'SName':'Meena','Mark1':98,'Mar12':86}  
del Dict['Mark1']  
print(Dict)
```

OUTPUT:

{'RollNo':12001,'SName':'Meena','Mar12':86}

48) Write the output for the given program?

```
Dict={'RollNo':12001,'SName':'Meena','Mark1':98,'Mar12':86} Dict.clear( )  
print(Dict)
```

OUTPUT: {}

49) Write the output for the given program?

```
>>>MyList=[34,98,47,'Kannan','Gowrisankar','Lenin','Sreenivasan']  
>>>MyList.insert(3,'Ramakrishnan')  
>>>print(MyList)
```

OUTPUT:

[34,98,47,'Ramakrishnan','Kannan','Gowrisankar','Lenin','Sreenivasan']

50) Write the output for the given program?

```
>>>Mylist=[34,45,48]  
>>>Mylist.extend([71,32,29])  
>>>print(Mylist)
```

OUTPUT: [34,45,48,90,71,32,29]

51) Write the output for the given program?

```
for x in range(1,11):  
print(x,'\n')
```

OUTPUT:

1
2
3
4
5
6
7
8
9
10

52) Write the output for the given program?

```
Toppers=(("Vinodini", "XII-F",98.7),("Soundarya", "XII-H",97.5),("Tharani", "XII-F,95.3),  
("Saisri", "XII-G",93.8))  
for i in Toppers:
```

```
print(i)
```

OUTPUT:

('Vinodini','XII-F',98.7)
('Soundarya','XII-H',97.5)
('Tharani','XII-F',95.3)
('Saisri','XII-G',93.8)

53) Write the output for the given program?

```
classStudent:  
def __init__(self,name):
```

```
self.name=name print(self.name)
S=Student("Tamil")
```

OUTPUT:

Tamil

54) Write the syntax of creating object.

Object_name = class_name()

55) Write program to find sum of two number using two private variables using methods.

CODE:

Class Sample:

```
def __init__(self,n1,n2):
    self.n1=n1
    self.n2=n2
def sum(self):
    print("ClassVariable1:",self.n1)
    print("ClassVariable2:",self.n2)
print("Sum:",self.n1 + self.n2)
S=Sample(5,10)
S.sum()
```

OUTPUT:

ClassVariable1:5
ClassVariable2:10
Sum:15

56) Write the output for the given program?

```
class Greeting:
    def __init__(self,name):
        self.name = name
    def display(self):
        print("Good Morning",self.name)
obj=Greeting('Bindu Madhavan')
obj.display()
```

OUTPUT

Good Morning Bindu Madhavan

57) How to define constructor and destructor.

Definition Constructor:

```
def __init__(self, [args]):
    <statements>
```

Definition Destructor:

```
def __del__(self):
    <statements>
```

58) Write the output for the given program?

```
class Sample:
    def __init__(self, num):
        print("Constructor of class Sample...")
        self.num=num
        print("The value is:",num)
    def __del__(self):
        print("Destructor of class Sample...")

S=Sample(10)
```

OUTPUT:

Constructor of class Sample...
The value is : 10
Destructor of class Sample...

59) What is the use of cd command. Give example.

cd command refers to change directory

Syntax: cd <absolute path>

>cd c:/My Documents/python/XII/CH14.doc

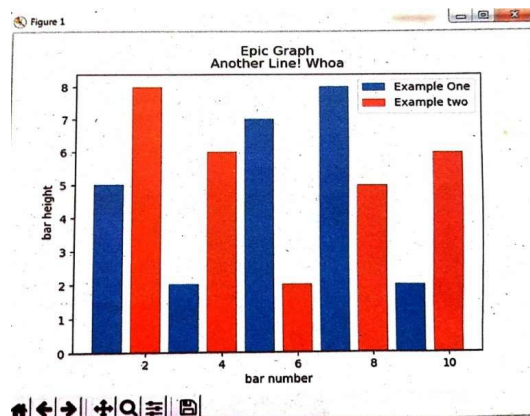
60) Explain each word of the following command.

COMMAND: Python<filename.py> -i <C++ filename without cpp extension>

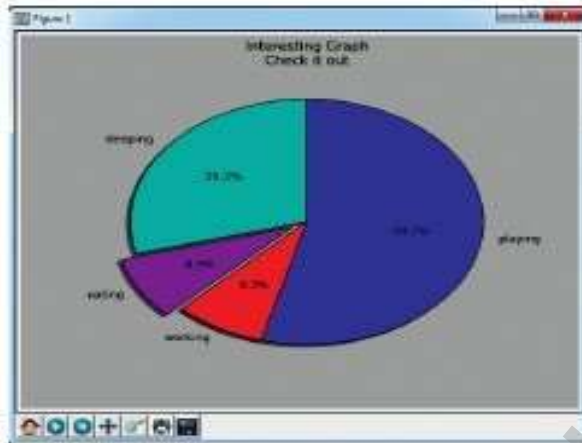
Python	Keyword to execute the Python program from command-line
<filename.py>	Name of the Python program to executed
-i	Input mode
<C++ filename without cpp extension>	Name of C++ file to be compiled and executed

61) Write the output for the given program?

```
import matplotlib.pyplot as plt
plt.bar([1,3,5,7,9],[5,2,7,8,2],label="Example one")
plt.bar([2,4,6,8,10],[8,6,2,5,6],label="Example two", color='g')
plt.legend()
plt.xlabel('bar number')
plt.ylabel('bar height')
plt.title('Epic Graph\n Another Line! Whoa')
plt.show()
```



62) Write the program to get the given output?



CODE:

```
import matplotlib.pyplot as plt
slices=[29.2,8.3,8.3,54.2]
activities=['sleeping','eating','working','playing']
cols=['c','m','r','b']
plt.pie(slices,labels=activities,colors=cols,startangle=90,shadow=True,explode=(0,0.1,0,0),
autopct='%.2f')
plt.title('Interesting Graph \n Check it out')
plt.show()
```

63) Write the output for the given program?

```
str="COMPUTERSCIENCE"
print(str)
print(str[0:7])
```

OUTPUT:

COMPUTERSCIENCE

COMPUTE

64) Write the output for the given program?

```
squares = [x**2 for x in range(1,11)]
print(squares)
```

OUTPUT:

[1,4,9,16,25,36,49,64,81, 100]

65) Write the output for the given program?

```
class Hosting:
def __init__(self,name):
    self.name=name
def display(self):
    print("Welcome to",self.name)
obj=Hosting("Python Programming")
obj.display()
```

OUTPUT:

Welcome to Python Programming

66) Write the output for the given program?

```
a="Computer"
b="Science"
x=a[4:]+b[len(b)-3:]
print(x)
```

OUTPUT:

Compnce

67) Write the output for the given program?

```
j=15
while(j>=10):
    print(j,end="\t")
    j=j-1
else:
    print("\nEnd of the loop")
```

OUTPUT:

15 14 13 12 11 10

End of the loop

68) Write the output for the given program?

```
k=5
while(k<=9):
    for i in range(1,k):
        print(i,end="\t")
        print(end="\n")
        k=k+1
```

OUTPUT:

1	2	3	4					
1	2	3	4	5				
1	2	3	4	5	6			
1	2	3	4	5	6	7		
1	2	3	4	5	6	7	8	