**Python Programs**

# This program prints Hello, world!

print('Hello, world!')

# This program for Variables

counter = 100

miles = 1000.0

name = "John"

print counter

print miles

print name

# Program on Python Strings

str = 'Hello World!'

print str # Prints complete string

print str[0] # Prints first character of the string

print str[2:5] # Prints characters starting from 3rd to 5th

print str[2:] # Prints string starting from 3rd character

print str \* 2 # Prints string two times

print str + "TEST" # Prints concatenated string

## #Program on Python Lists

list = [ 'abcd', 786 , 2.23, 'john', 70.2 ]

tinylist = [123, 'john']

print list # Prints complete list

print list[0] # Prints first element of the list

print list[1:3] # Prints elements starting from 2nd till 3rd

print list[2:] # Prints elements starting from 3rd element

print tinylist \* 2 # Prints list two times

print list + tinylist # Prints concatenated lists

## #Program on Python Tuples

tuple = ( 'abcd', 786 , 2.23, 'john', 70.2 )

tinytuple = (123, 'john')

print tuple # Prints the complete tuple

print tuple[0] # Prints first element of the tuple

print tuple[1:3] # Prints elements of the tuple starting from 2nd till 3rd

print tuple[2:] # Prints elements of the tuple starting from 3rd element

print tinytuple \* 2 # Prints the contents of the tuple twice

print tuple + tinytuple # Prints concatenated tuples

## # Program On Python Dictionary

dict = {}

dict['one'] = "This is one"

dict[2] = "This is two"

tinydict = {'name': 'john','code':6734, 'dept': 'sales'}

print dict['one'] # Prints value for 'one' key

print dict[2] # Prints value for 2 key

print tinydict # Prints complete dictionary

print tinydict.keys() # Prints all the keys

print tinydict.values() # Prints all the values

#programs on operators

1. Python Arithmetic Operators

a = 21

b = 10

c = 0

c = a + b

print "Line 1 - Value of c is ", c

c = a - b

print "Line 2 - Value of c is ", c

c = a \* b

print "Line 3 - Value of c is ", c

c = a / b

print "Line 4 - Value of c is ", c

c = a % b

print "Line 5 - Value of c is ", c

a = 2

b = 3

c = a\*\*b

print "Line 6 - Value of c is ", c

a = 10

b = 5

c = a//b

print "Line 7 - Value of c is ", c

1. Python Comparison Operators
2. a = 21
3. b = 10
4. c = 0
5. if ( a == b ):
6. print "Line 1 - a is equal to b"
7. else:
8. print "Line 1 - a is not equal to b"
9. if ( a != b ):
10. print "Line 2 - a is not equal to b"
11. else:
12. print "Line 2 - a is equal to b"
13. if ( a <> b ):
14. print "Line 3 - a is not equal to b"
15. else:
16. print "Line 3 - a is equal to b"
17. if ( a < b ):
18. print "Line 4 - a is less than b"
19. else:
20. print "Line 4 - a is not less than b"
21. if ( a > b ):
22. print "Line 5 - a is greater than b"
23. else:
24. print "Line 5 - a is not greater than b"
25. a = 5;
26. b = 20;
27. if ( a <= b ):
28. print "Line 6 - a is either less than or equal to b"
29. else:
30. print "Line 6 - a is neither less than nor equal to b"
31. if ( b >= a ):
32. print "Line 7 - b is either greater than or equal to b"
33. else:
34. print "Line 7 - b is neither greater than nor equal to b"

iii) Python Assignment Operators

a = 21

b = 10

c = 0

c = a + b

print "Line 1 - Value of c is ", c

c += a

print "Line 2 - Value of c is ", c

c \*= a

print "Line 3 - Value of c is ", c

c /= a

print "Line 4 - Value of c is ", c

c = 2

c %= a

print "Line 5 - Value of c is ", c

c \*\*= a

print "Line 6 - Value of c is ", c

c //= a

print "Line 7 - Value of c is ", c

iv) Python Bitwise Operators

a = 60 # 60 = 0011 1100

b = 13 # 13 = 0000 1101

c = 0

c = a & b; # 12 = 0000 1100

print "Line 1 - Value of c is ", c

c = a | b; # 61 = 0011 1101

print "Line 2 - Value of c is ", c

c = a ^ b; # 49 = 0011 0001

print "Line 3 - Value of c is ", c

c = ~a; # -61 = 1100 0011

print "Line 4 - Value of c is ", c

c = a << 2; # 240 = 1111 0000

print "Line 5 - Value of c is ", c

c = a >> 2; # 15 = 0000 1111

print "Line 6 - Value of c is ", c

v) Python Logical Operators

vi) Python Membership Operators

a = 20

b = 20

if ( a is b ):

print "Line 1 - a and b have same identity"

else:

print "Line 1 - a and b do not have same identity"

if ( id(a) == id(b) ):

print "Line 2 - a and b have same identity"

else:

print "Line 2 - a and b do not have same identity"

b = 30

if ( a is b ):

print "Line 3 - a and b have same identity"

else:

print "Line 3 - a and b do not have same identity"

if ( a is not b ):

print "Line 4 - a and b do not have same identity"

else:

print "Line 4 - a and b have same identity"

vii)Python Identity Operators

a = 20

b = 20

if ( a is b ):

print "Line 1 - a and b have same identity"

else:

print "Line 1 - a and b do not have same identity"

if ( id(a) == id(b) ):

print "Line 2 - a and b have same identity"

else:

print "Line 2 - a and b do not have same identity"

b = 30

if ( a is b ):

print "Line 3 - a and b have same identity"

else:

print "Line 3 - a and b do not have same identity"

if ( a is not b ):

print "Line 4 - a and b do not have same identity"

else:

print "Line 4 - a and b have same identity"

viii) Python Operators Precedence

a = 20

b = 10

c = 15

d = 5

e = 0

e = (a + b) \* c / d #( 30 \* 15 ) / 5

print "Value of (a + b) \* c / d is ", e

e = ((a + b) \* c) / d # (30 \* 15 ) / 5

print "Value of ((a + b) \* c) / d is ", e

e = (a + b) \* (c / d); # (30) \* (15/5)

print "Value of (a + b) \* (c / d) is ", e

e = a + (b \* c) / d; # 20 + (150/5)

print "Value of a + (b \* c) / d is ", e

#Program On Decision control structures:

i)Simple – If

n=int(input(“enter n”))

if (n==0):

print(“zero”)

II)If else

n=int(input(“enter n values”))

if (n>0):

print(“positive”)

else:

print(“negative”)

III) Nested -If

a=int(input(“enter value of a”))

b=int(input(“enter value of b”))

c=int(input(“enter value of c”))

if(a>b):

if(a>c):

print(“a is large”)

else:

print(“c is large”)

elif (b>c):

print(“b is large”)

else :

print(“c is large”)

IV) If-Elif-Else :

a=int(input(“enter value of a”))

b=int(input(“enter value of b”))

if(a==b):

print(“both are equal”)

elif(a>b):

print(“a is greater than b”)

else:

print(“a is less than b”)

#Programs on Iterative control statements

i)While loop

n=int(input(“enter n values”))

i=0

while(i<=n):

print(i)

i=i+1

Print(“end of loop”)

ii)For loop

\*for i in range (5):

print(i)

\*for i in range(1,5):

print(i)

\*for i in range(1,5,2):

print(i)

\*for i in range(5,0,-1):

print(i)

#unconditional jump statements:

i)Break

i=1

while(i<=10):

print(i)

if(i==5):

break

i=i+1

print(“loop terminates”)

ii)continue

for i in range(1,10):

if(i==5):

continue

print(i)

i=i+1

print(“loop terminates”)