In [13]:
```
# NO:4
B=4
print("Enter the value of variable:",B)
print("\nThe value of variable:",B)
```

```
Enter the value of variable: 4

The value of variable: 4
```

In [46]:
```
# NO:7
"""Format Method:

Assuming"""
a="Python"
b=3.6
print(__doc__)
print("\nMy name is {}, I'm {}".format(a,b))
print("\n% Operator and format specifier:")
print("\nAssuming")
x=3.0
y=4.0
print("\nx=",x)
print("\ny=",y)
print("\n%.2f,%.2f"%(x,y))
```

```
Format Method:

Assuming

My name is Python, I'm 3.6

% Operator and format specifier:

Assuming

x= 3.0

y= 4.0

3.00,4.00
```

]:
```
#question 12
a=0b00001010
b=0b00000100
"""Assuming a=10(0000 1010 in binary) and b=4(0000 0100 in binary)"""
print(__doc__)
print("\na&b =",a&b)
print("\na|b =",a|b)
print("\n~a =",~a)
print("\na^b =",a^b)
print("\na<<2 =",a<<2)
print("\na>>1 =",a>>1)
```

```
Assuming a=10(0000 1010 in binary) and b=4(0000 0100 in binary)

a&b = 0

a|b = 14

~a = -11

a^b = 14

a<<2 = 40

a>>1 = 5
```

In [10]:
```
#question 13.a
x=int(input("Enter the value of x: "))
y=int(input("\nEnter the value of y: "))
print("\nThe value of x before swapping is :",x)
print("\nThe value of y before swapping is :",y)
temp = x
x = y
y = temp
print("\nThe value of x after swapping is :",x)
print("\nThe value of y after swapping is :",y)
```

```
Enter the value of x: 5

Enter the value of y: 6

The value of x before swapping is : 5

The value of y before swapping is : 6

The value of x after swapping is : 6

The value of y after swapping is : 5
```

In [11]:
```
#13.b
x=int(input("Enter the value of x: "))
y=int(input("\nEnter the value of y: "))
print("\nThe value of x before swapping is :",x)
print("\nThe value of y before swapping is :",y)
x,y=y,x
print("\nThe value of x after swapping is :",x)
print("\nThe value of y after swapping is :",y)
```

```
Enter the value of x: 5

Enter the value of y: 6

The value of x before swapping is : 5

The value of y before swapping is : 6

The value of x after swapping is : 6

The value of y after ng is : 5
```

In [12]:
```
#question 14.a
a=int(input("Enter the value of a: "))
b=int(input("\nEnter the value of b: "))
c=int(input("\nEnter the value of c: "))
d=int(input("\nEnter the value of d: "))
e=int(input("\nEnter the value of e: "))
r=int(input("\nEnter the value of r: "))
f=r//a+b*c-d/e
print("\nThe result of an expression is : %f"%f)
```

```
Enter the value of a: 2

Enter the value of b: 3

Enter the value of c: 4

Enter the value of d: 5

Enter the value of e: 6

Enter the value of r: 7

The result of an expression is : 14.166667
```

In [13]:
```
#14.b
a=int(input("Enter the value of a: "))
b=int(input("\nEnter the value of b: "))
c=int(input("\nEnter the value of c: "))
d=int(input("\nEnter the value of d: "))
e=int(input("\nEnter the value of e: "))
r=int(input("\nEnter the value of r: "))
f=r//((a+b)*((c-d)/e))
print("\nThe result of an expression is : %.1f"%f)
```

```
Enter the value of a: 2

Enter the value of b: 3

Enter the value of c: 4

Enter the value of d: 5

Enter the value of e: 6

Enter the value of r: 7

The result of an expression is : -9.0
```

[1]:
```python
#21
a=int(input("Enter the number: "))
for i in range(1,a+1):
    if a%i==0:
        print(i)
```

```
Enter the number: 12
1
2
3
4
6
12
```

7]:
```
#22
num=int(input("Enter a number: "))
sum=0
n=len(str(num))
temp=num
while temp>0:
    digit=temp%10
    sum+=digit**n
    temp//=10
if num==sum:
    print("\n{} is an Armstrong number".format(num))
else :
    print("\n{} is not an Armstrong number".format(num))
```

```
Enter a number: 56

56 is not an Armstrong number
```

[12]:
```
#24
a=int(input("Enter a number:"))
list1=[12,54,65,39,102,339,221]
list2=[]
for i in list1:
      if a==0:
          break
      elif i%a==0:
         list2.append(i)
     elif a==1:
         continue
print("\nNumbers divisible by %d are "%a,list2)
```

```
Enter a number:13

Numbers divisible by 13 are  [65, 39, 221]
```

1]:
```
#25.a and b
a = input("Enter list elements: ").split()
count = 0
for o in a:
  count+=1
for i in range(count):
  a[i]=  int(a[i])

print ("Printing List element without using list methods:")
for i in a:
  print(i,end=' ')
print("\nPrinting List element using list method:")
print(a)
```

```
Enter list elements: 1 2 3 4
Printing List element without using list methods:
1 2 3 4
Printing List element using list method:
[1, 2, 3, 4]
```

[3]:
```
#26.a
a=[5,10,7,4,15,3]
b=() #Empty Tuple
c=list(b) #To copy the content of list, we do conversion
c=a.copy() #Copy
d=tuple(c)
print(f"The list is {a}")
print(f"The tuple is {d}")
```

```
The list is: [5, 10, 7, 4, 15, 3]
The tuple is: (5, 10, 7, 4, 15, 3)
```

pyth

[43]:
```
#26.b
a=("apple","banana","cherry")
print("the tuple is:",a)
c=list(a)
print("\nthe list is:",c)
c.remove("banana")
print("\nElement deleted from list:",c)
```

```
the tuple is: ('apple', 'banana', 'cherry')

the list is: ['apple', 'banana', 'cherry']

Element deleted from list: ['apple', 'cherry']
```

In [45]:
```
#27.a
a={
    "brand":"ford",
    "model":"Mustang",
    "year":1964
}
print("The dict is:",a)
```

```
The dict is: {'brand': 'ford', 'model': 'Mustang', 'year': 1964}
```

In [48]:
```
#27.b
b={1:[1,5,6],2:"ramu","at":[3,10,15,20,36],4:(5,6,2)}
print("Values of key \"at\" are:\n",b["at"])
```

```
Values of key "at" are:
 [3, 10, 15, 20, 36]
```

In [48]:
```
#27.c
a=['Rash','Kil','Varsha']
b=[1,4,5]
c=a+b
dic={c[0]:c[3],c[1]:c[4],c[2]:c[5]}
print('Original Key list is:',a)
print('Original value list:',b)
print('Resultant dictonary is:',dic)
```

```
Original Key list is: ['Rash', 'Kil', 'Varsha']
Original value list: [1, 4, 5]
Resultant dictonary is: {'Rash': 1, 'Kil': 4, 'Varsha': 5}
```

]:
```
#28
import sys
n=len(sys.argv)-1
print(n)
```

```
2
```

In [9]:
```
#30.a
import array
b=array.array('i',[1,2,3,4,5,6,7])
c=int(input("Enter the number of elements to be printed "))
print(b[0:c])
```

```
Enter the number of elements to be printed 3
array('i', [1, 2, 3])
```

In [69]:
```
#30.c
b[::-1]
d=[]
for i in b:
    d.append(i)
print(d[::-1])
```

```
[7, 6, 5, 4, 3, 2, 1]
```

In [67]:
```
#30.d
print("Elements of original array:\n",a)
```

python prog

```
Elements of original array:
 [[1 2 3]
 [4 5 6]]
```

In [123]:
```
#31.a
import numpy as np
a=np.array([1,2,3])
b=np.append(a,[5,6,7])
b.shape=(2,3)
print(b)
```

```
[[1 2 3]
 [5 6 7]]
```

In [57]:
```
#31.b
#a.shape=(3,2)
b=np.resize(a,(3,2))
print(b)
```

```
[[1 2]
 [3 4]
 [5 6]]
```

In [25]:
```
#31.c
c=np.array([1,2,3,4,5,6])
print(c.shape)
print("\nAn 1d array with 6 elements",c)
```

```
(6,)

An 1d array with 6 elements [1 2 3 4 5 6]
```

In [30]:
```
#31.d
a=np.array([1,2,3,4,5,6])
b=a.copy()
print("Original array:",a)
print("Copied array:",b)
```

```
Original array: [1 2 3 4 5 6]
Copied array: [1 2 3 4 5 6]
```

```
#35.a
a=int(input("Enter the number: "))
x=1
for i in range(1,a+1):
    x*=i
print("The factorial of %d is"%a,x)
```

```
Enter the number: 5
The factorial of 5 is 120
```

In [7]:

```
#35.b
def fact(n):
    if n==0:
        return 1
    else:
        return n*fact(n-1)
x=int(input("Enter the number: "))
fact(x)
```

```
Enter the number: 5
```

Out[7]:

```
120
```

In [2]:

```
#36.a
def fib(n):
    a=0
    b=1
    print("Fibonacci series:",a,b,end=" ")
    for i in range(2,n):
        c=a+b
        print(c,end=" ")
        a=b
        b=c
x=int(input("Enter the number: "))
fib(x)
```

```
Enter the number: 8
Fibonacci series: 0 1 1 2 3 5 8 13
```

In [1]:

```
#36.b
def fib(n):
    if n<=1:
        return 1
    else:
        return fib(n-1)+fib(n-2)
x=int(input("Enter the number: "))
print("0",end=" ")
for i in range(0,x):
    print(fib(i),end=" ")
```

```
Enter the number: 5
0 1 1 2 3 5
```

```
#39.a
try:
    a=int(input("Enter the a value: "))
    b=int(input("Enter the b value: "))
    print(a/b)
except(ZeroDivisionError,ValueError):
    print("Enter a valid number")
    print("ZerodivisionError")
```

```
Enter the a value: 5
Enter the b value: b
Enter a valid number
ZerodivisionError
```

In [50]:

```
#39.b
try:
    a=int(input("Enter the a value: "))
    b=int(input("Enter the b value: "))
    print(a/b)
except(ZeroDivisionError):
    print("ZerodivisionError")
except(ValueError):
    print("Enter a valid number")
```

```
Enter the a value: 5
Enter the b value: n
Enter a valid number
```

In [15]:

```
#39.c
a=int(input("Enter the number: "))
try:
    print(str(ab))
except:
    print("error occured and handled")
```

```
Enter the number: 1
error occured and handled
```

In [13]:

```
#39.d
x=input("enter the character: ")
try:
    print(int(x))
except:
    print("Invalid code")
else:
    print("if try is true else is executed")
finally:
    print("Always executed")
```

```
enter the character: a
Invalid code
Always executed
```

```
#40
a=open('k.py','a')
a.write("This is Delhi\n")
a.write("This is Paris\n")
a.write("This is London today")

a=open('k.py','r')
a.read()
```

Out[17]:

```
'This is Delhi\nThis is Paris\nThis is London today'
```

In [1]:

```
#41
b=open('k.py','a+')
b.write("    this is a simple file program  ")
print(b.tell())
b.seek(10)
b.read()
```

```
35
```

Out[1]:

```
's a simple file program  '
```