In [1]:
```
a=0x9
print(oct(a))
print(bin(a))
print(int(a))
```

```
0o11
0b1001
9
```

In [2]:
```
a=0o11
print(oct(a))
print(bin(a))
print(hex(a))
```

```
0o11
0b1001
0x9
```

In [4]:
```
a,b,c=1,22.5,"ajay"
print(a)
print(b)
print(c)
```

```
1
22.5
ajay
```

In [5]:
```
import sys
v=43
print(sys.getsizeof(v))
```

```
28
```

In [7]:
```
v=43.3
print(id(v))
print(type(v))
print(sys.getsizeof(v))
```

```
2116776418736
<class 'float'>
24
```

In [8]:
```
print(v,"is integer ?",isinstance(v,int))
```

```
43.3 is integer ? False
```

In [9]:
```
v=43.3
print(id(v))
print(type(v))
print(sys.getsizeof(v))
print(v,"is integer ?",isinstance(v,float))
```

```
2116776418448
<class 'float'>
24
43.3 is integer ? True
```

In [11]:
```
v=43.3-6j
print(id(v))
print(type(v))
print(sys.getsizeof(v))
print(v,"is complex ?",isinstance(v,complex))
```

```
2116776418960
<class 'complex'>
32
(43.3-6j) is complex ? True
```

```
c=false
b=true
print(type(b))
```

In [13]:
```
c=False
b=True
print(type(b))
```

```
<class 'bool'>
```

In [14]:
```
isinstance(b,bool)
```

Out[14]:
```
True
```

In [15]:
```
bool(1)
```

Out[15]:
```
True
```

In [16]:
```
bool(0)
```

Out[16]:
```
False
```

In [17]:
```
s= "ajay"
s1='ram'
print(s)
print(s1)
len(s)
len(s1)
```

```
ajay
ram
```

Out[17]:
```
3
```

In [18]:
```
s= "ajay"
s1='ram'
print(s)
print(s1)
```

```
ajay
ram
```

In [19]:
```
len(s)
```

Out[19]:
```
4
```

In [20]:
```
len(s1)
```

Out[20]:
```
3
```

In [21]:
```
x=True
y=False
print(x and y)
```

```
False
```

In [35]:
```
b=int(input("enter the mark:"))
if(b>50):
   print("pass")
else:
    print("fail")
```

```
enter the mark:67
pass
```

In [40]:
```
a=int(input("enter the value:"))
if(a/2)==0:
    print("even")
else:
    print("odd")
```

```
enter the value:3
odd
```

In [1]:
```
b=int(input("enter the employee salary:"))
if(b>10000):
    b=b*0.1

   print("10% bonus",b)
else:
    print("no bonus",b)
```

```
enter the employee salary:51000
10% bonus
```

In [12]:
```
x=18
y=6
print("bitwise not",x|y)
```

```
bitwise not 22
```

In [13]:
```
x=18
y=6
print("bitwise or",x|y)
```

```
bitwise or 22
```

In [14]:
```
x=18
y=6
print("bitwise NOT",x|y)
```

```
bitwise NOT 22
```

In [15]:
```
x=18
y=6
print("bitwise OR",x|y)
```

```
bitwise OR 22
```

In [16]:
```
x=18
y=6
print("bitwise XOR",x^y)
```

```
bitwise XOR 20
```

In [22]:
```
a=int(input("enter the number 1 :"))
b=int(input("enter the number 2 :"))
c=int(input("enter the number 3 :"))
if (a>=b) and (a>=c):
    largest=a
elif (b>=a) and (b>=c):
    largest=b
else:
    largest=c
print("largest number is ",largest)
```

```
enter the number 1 :10
enter the number 2 :15
enter the number 3 :20
largest number is  20
```

In [ ]:
```

```

In [37]:
```
i=1
n=int(input("ënter the number"))
for i in range(i<=n):
    sum=sum+i
    print(sum)
```

```
ënter the number10
55
```

In [38]:
```
i=1
n=int(input("ënter the number"))
for i in range(i<=n):
    sum=sum+i
    print(sum)
```

```
ënter the number78
55
```

In [42]:
```
n=int(input("ënter the number"))
for i in range(1,11):
    print(n,'x',i,"=",n*i)
```

```
ënter the number8
8 x 1 = 8
8 x 2 = 16
8 x 3 = 24
8 x 4 = 32
8 x 5 = 40
8 x 6 = 48
8 x 7 = 56
8 x 8 = 64
8 x 9 = 72
8 x 10 = 80
```

In [9]:
```
mark=int(input("ënter the mark :"))
if mark>=90:
    print("grade A")
elif(mark<=75 and mark>65):
    print("grade b")
elif(mark<=65 and mark>50):
    print("grade C")
elif(mark<=50 and mark>35):
    print("grade D")
else:
    print("invalid")
```

```
ënter the mark :67
grade b
```

In [4]:
```
a=int(input("ënter the num :"))
b=int(input("ënter the num :"))
c=int(input("ënter the num :"))
x=min(a,b,c)
y=max(a,b,c)
z=(a+b+c)-x-y
print("numbers in order:",x,y,z)
```

```
ënter the num :4
ënter the num :5
ënter the num :6
numbers in order: 4 6 5
```

In [14]:
```
for i in range(7):
    for j in range(i):
        print("*",end="")
    print()
```

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

In [15]:
```
for i in range(7):
    for j in range(i):
        print(j,end="")
    print()
```

```
0
01
012
0123
01234
012345
```

In [19]:
```
for i in range(7):
    for j in range(i):
        print("1001",end="")
    print()
```

```
1001
10011001
100110011001
1001100110011001
10011001100110011001
100110011001100110011001
```

In [23]:
```
for i in range(7):
    for j in range(i-1):
        print("*",end="")
    print()
```

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

In [30]:
```
a=0
for i in range(-1):
    a+=1
    for j in range(1,i+1):
        print("*",end="")
    print()
```

In [31]:
```
for i in range(7):
    for j in range(i):
        print(2**j,end="")
    print()
```

```
1
12
124
1248
124816
12481632
```

In [41]:
```
for i in range(7):
    for j in range(i):
        print(j,end="")
    print()
```

```
for i in range(7,0,-1):
    for j in range(i):
        print(j,end="")
    print()
```

```
0
01
012
0123
01234
012345
0123456
012345
01234
0123
012
01
0
```

In [42]:
```
for i in range(7,0,-1):
    for j in range(i):
        print(j,end="")
    print()
```

```
0123456
012345
01234
0123
012
01
0
```

In [43]:
```
for i in range(7,0,-1):
    for j in range(i):
        print("*",end="")
    print()
```

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

In [45]:
```
for i in range(7,0,-1):
    for j in range(i):
        print(chr(65+j),end="")
    print()
```

```
ABCDEFG
ABCDEF
ABCDE
ABCD
ABC
AB
A
```

In [48]:
```
for i in range(8,0,-1):
    if i==3:
        break
    else:
         print(i)
```

```
8
7
6
5
4
```

In [50]:
```
for i in range(10):
    print(i)
else:
        print("condition executed out of loop")
```

```
0
1
2
3
4
5
6
7
8
9
condition executed out of loop
```

In [51]:
```
for i in range(8,0,-1):
    if i==3:
        continue
    else:
         print(i)
```

```
8
7
6
5
4
2
1
```

In [53]:
```
i="ajay"
print(type(i))
```

```
<class 'str'>
```

In [55]:
```
i[3]
```

Out[55]: 'y'

In [56]:
```
i[2
]
```

Out[56]: 'a'

In [58]:
```
i[-1]
```

Out[58]: 'y'

In [59]:
```
i="ajay"
print(id(i))
print(type(i))
```

```
1865282037296
<class 'str'>
```

In [61]:
```
i[:2]
```

Out[61]: 'aj'

In [62]:
```
i[1:2]
```

Out[62]: 'j'

In [71]:
```
j="ajay"
for i in range(1,6,1):
    print(j[i])
```

```
j
a
y

---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
<ipython-input-71-1276b1feed94> in <module>
      1 j="ajay"
      2 for i in range(1,6,1):
----> 3     print(j[i])

IndexError: string index out of range
```

In [4]:
```
num=999
if num > 1:
    for i in range(2,num):
        if (num % i) == 0:
            print(num,"is not a prime number")
            break
            else:
                print(num,"is a prime number")
                else:
                    print(num,"is not a prime number")
```

```
  File "<ipython-input-4-a1fc8de1234d>", line 7
    elif:
    ^
SyntaxError: invalid syntax
```

In [11]:
```
i="ajay"
char=i[1]
print("character:",char)
```

```
character: j
```

In [20]:
```
i="rak"
length=len(i)
lastchar=i[length-1]
print("last character:",char)
```

```
last character: j
```

In [21]:
```
s="welcome ajay"
print("to" in s)
```

```
False
```

In [23]:
```
s1="     ajay "
s1
```

Out[23]: '   ajay '

In [24]:
```
s1.strip()
```

Out[24]: 'ajay'

In [26]:
```
d="ÄJAY"
d.lower()
```

Out[26]: 'äjay'

In [27]:
```
d="ajay"
d.upper()
```

Out[27]: 'AJAY'

In [28]:
```
d.replace("ajay","raj")
```

Out[28]: 'raj'

In [30]:
```
s="he is a bad boy"
s.count("he")
```

Out[30]: 1

In [31]:
```
s.startswith("he")
```

Out[31]: True

In [32]:
```
s.startswith("boy")
```

Out[32]: False

In [34]:
```
s=s.center(100)
print(s)
```

```
                                    he is a bad boy
```

In [37]:
```
s=s.rjust(150)
print(s)
```

```
                                                                                                                  he is a bad boy
```

In [39]:
```
h="welcome to india"
l=h.find("to")
print(l)
```

```
8
```

In [40]:
```
l=h.index("to")
print(l)
```

```
8
```

In [42]:
```
print(h.isalpha())
```

```
False
```

In [44]:
```
print(h.isalnum())
print(h.isnumeric())
```

```
False
False
```

In [45]:
```
print(h.isdecimal())
```

```
False
```

In [46]:
```
print(h.isupper())
```

```
False
```

In [47]:
```
print(h.islower())
```

```
True
```

In [50]:
```
e="one two three one one two one three"
l=e.rfind("one")
print(l)
```

```
26
```

In [52]:
```
l=e.rindex("two")
print(l)
```

```
22
```

In [55]:
```
g=[1,"äjay",3.4,True,3-4]
print(type(g))
```

```
<class 'list'>
```

In [56]:
```
print(g)
```

```
[1, 'äjay', 3.4, True, -1]
```

In [58]:
```
g[2]
```

Out[58]: 3.4

In [ ]:

In [59]:
```
list=[]
print(type(list))
```

```
<class 'list'>
```

In [61]:
```
g1=[1,3,5]
1
```

Out[61]: 1

In [62]:
```
g1=[1,3,5]
print(g1)
```

```
[1, 3, 5]
```

In [64]:
```
g=[1,"äjay",3.4,True,3-4]
print(type(g))
print(g)
```

```
<class 'list'>
[1, 'äjay', 3.4, True, -1]
```

In [67]:
```
g3=[1,"äjay",[2,3],[45,67]]
print(g3)
```

```
[1, 'äjay', [2, 3], [45, 67]]
```

In [68]:
```
len(g3)
```

Out[68]: 4

In [71]:
```
g3[0]
```

Out[71]: 1

In [72]:
```
g3[-1]
```

Out[72]: [45, 67]

In [74]:
```
g3[1][0]
```

Out[74]: 'ä'

In [75]:
```
g3[0:4]
```

Out[75]: [1, 'äjay', [2, 3], [45, 67]]

In [76]:
```
g3[:3]
```

Out[76]: [1, 'äjay', [2, 3]]

In [77]:
```
g3[-1:]
```

Out[77]: [[45, 67]]

In [78]:
```
g3[:]
```

Out[78]: [1, 'äjay', [2, 3], [45, 67]]

In [79]:
```
g3.append(78)
print(g3)
```

```
[1, 'äjay', [2, 3], [45, 67], 78]
```

In [82]:
```
g3.insert(0,2)
print(g3)
```

```
[2, 1, 'äjay', [2, 3], [45, 67], 78]
```

In [3]:
```
num=int(input("enter a number"))
factors=[]
for i in range(1,num+1):
    if num%i==0:
        factors.append(i)
        print ("Factors of {} = {}".format(num,factors))
```

```
enter a number6
Factors of 6 = [1]
Factors of 6 = [1, 2]
Factors of 6 = [1, 2, 3]
Factors of 6 = [1, 2, 3, 6]
```

In [10]:
```
g=[11, 5, 17, 18, 23]
total=0
for i in (g):
    total = total + i
    print("Sum of all elements in given list: ", total)
```

```
Sum of all elements in given list:  11
Sum of all elements in given list:  16
Sum of all elements in given list:  33
Sum of all elements in given list:  51
Sum of all elements in given list:  74
```

In [13]:
```
a = [1, 2, 3]

maximum= max(a)
print(maximum)
```

```
3
```

In [22]:
```
h=(23,11,33,44)
for i in h:
    print(i)
```

```
23
11
33
44
```

In [24]:
```
s = h.count(22)
print(i)
```

```
44
```

In [26]:
```
a = (1, 3, 7, 8, 7, 5, 4, 6, 8, 5)

x = a.count(5)

print(x)
```

```
2
```

In [30]:
```
g=(1,2,3,4,,8,5,6)
a=int(input("enter the number"))
if a in g:
    print("yes",a)
else:
    print("no",a)
```

```
enter the number2
yes 2
```

In [31]:
```
g.index(2)
```

Out[31]:
```
1
```

In [34]:
```
sorted(g)
```

Out[34]:
```
[1, 2, 3, 4, 5, 6]
```

In [37]:
```
a={"ajay","raj","ram"}
a
```

Out[37]:
```
{'ajay', 'raj', 'ram'}
```

In [39]:
```
type(a)
```

Out[39]:
```
set
```

In [40]:
```
b={23.5,33.4,226.4,12.4}
b
```

Out[40]:
```
{12.4, 23.5, 33.4, 226.4}
```

In [42]:
```
c={"ajay",12,11.3}
c
```

Out[42]:
```
{11.3, 12, 'ajay'}
```

In [45]:
```
h={11,44}
for i in h:
    print(i)
```

```
11
44
```

In [ ]:
```
r={"1","2","3","ajay"}
a=input("enter the number")
if a in r:
    print("present",a)
else:
    print("not present",a)
```

In [ ]:
```
r={"1","2","3","ajay"}
print(r)
```

In [ ]:
```
r={"ajay"}
print(r)
```

In [1]:
```
j=[1,2,34]
j
```

Out[1]:
```
[1, 2, 34]
```

In [5]:
```
import program3
```

```
---------------------------------------------------------------------------
ModuleNotFoundError                       Traceback (most recent call last)
<ipython-input-5-f0f8e50af88c> in <module>
----> 1 import program3

ModuleNotFoundError: No module named 'program3'
```

In [6]:
```
import program4
```

In [7]:
```
program4.hi("ajay")
```

```
helloajay
```

In [3]:
```
class student:
    def _init_(self):
        print("hi")


    def tec(self,name):
        print("welcome !!!",name)
st1= student()
st1.tec("ajay")
```

```
welcome !!! ajay
```

In [ ]:
```

```