

## If Else statements

In [1]:

```
a=int(input("Enter the day: "))
if(a==1):
    print("mon")
elif(a==2):
    print("tue")
elif(a==3):
    print("wed")
elif(a==4):
    print("thu")
elif(a==5):
    print("fri")
elif(a==6):
    print("sat")
elif(a==7):
    print("sun")
else:
    print("Enter a valid number")
```

Enter the day: 3  
wed

## Loops

- while loop

In [2]:

```
i=0
n=10
while(i<n):
    print("%d times hello world"%i)
    i+=1
print(i)
```

0 times hello world  
1 times hello world  
2 times hello world  
3 times hello world  
4 times hello world  
5 times hello world  
6 times hello world  
7 times hello world  
8 times hello world  
9 times hello world  
10

In [3]:

```
i,j=0,0
n=5

while(i<n):
    j=0
    while(j<=i):
        print("*",end=" ")
        j+=1
    print("")
    i+=1
```

```
*
* *
* * *
+ + + +
```

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

In [4]:

```
i=5
j=1

while(i>=1):
    j=1
    while(j<=i):
        print("*",end=" ")
        j+=1
    print("")
    i-=1
```

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

In [5]:

```
i,j,k=5,1,1

while(i>=1):
    j,k=1,1

    while(k<=(5-i)):
        print(" ",end=" ")
        k+=1
    while(j<=i):
        print("*",end=" ")
        j+=1

    print("")
    i-=1
```

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

In [6]:

```
i,j,k=1,1,1

while(i<=5):
    j,k=1,1

    while(k<=(5-i)):
        print(" ",end=" ")
        k+=1
    while(j<=i):
        print("*",end=" ")
        j+=1
    print("")
    i+=1
```

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

- for loop

In [7]:

```
for i in range(1,10):  
    print("%d"%i,end=" ")
```

1 2 3 4 5 6 7 8 9

In [8]:

```
for i in range(1,20,3):  
    print(i,end=" ")
```

1 4 7 10 13 16 19

In [9]:

```
prod=1  
n=int(input("Enter the number: "))  
for i in range(n,1,-1):  
    prod*=i  
print("factorial is:",prod)
```

Enter the number: 8  
factorial is: 40320

In [10]:

```
n=10  
for x in range(n):  
    print(x)
```

0  
1  
2  
3  
4  
5  
6  
7  
8  
9

In [11]:

```
for i in range(9):  
    for j in range(9):  
        print(min(8-i,8-j,i,j),end=" ")  
    print()
```

0 0 0 0 0 0 0 0 0  
0 1 1 1 1 1 1 1 0  
0 1 2 2 2 2 2 1 0  
0 1 2 3 3 3 2 1 0  
0 1 2 3 4 3 2 1 0  
0 1 2 3 3 3 2 1 0  
0 1 2 2 2 2 2 1 0  
0 1 1 1 1 1 1 1 0  
0 0 0 0 0 0 0 0 0

## Pass, break,continue

In [12]:

```
for i in range(10):  
    pass
```

In [13]:

In [13]:

```
for i in range(10):
    if(i==5):
        pass
    print(i,end=" ")
```

0 1 2 3 4 5 6 7 8 9

In [14]:

```
for i in range(10):
    if(i==5):
        break
    print(i,end=" ")
```

0 1 2 3 4

In [15]:

```
for i in range(10):
    print(i,end=" ")
    if(i==5):
        break
```

0 1 2 3 4 5

In [26]:

```
for i in range(20,1,-1):
    print("%d"%(i*i),end=" ")
```

400 361 324 289 256 225 196 169 144 121 100 81 64 49 36 25 16 9 4

In [48]:

```
for i in range(20):
    if(i%2==0):
        continue
    print("* " * i)
```

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

In [31]:

```
for i in range(10):
    print("%d " * i * i)
```

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
6 6 6 6 6 6
7 7 7 7 7 7 7
8 8 8 8 8 8 8 8
9 9 9 9 9 9 9 9 9
```

In [42]:

```

for i in range(10):
    print(i,end=" ")
    if(i==4):
        print("dogs")
        continue
    if(i==0 or i==1):
        print("sheep")
    else:
        print("sheeps")

```

```

0 sheep
1 sheep
2 sheeps
3 sheeps
4 dogs
5 sheeps
6 sheeps
7 sheeps
8 sheeps
9 sheeps

```

In [53]:

```

n=int(input())
for i in range(2,n+1):
    for j in range(2,i):
        if(i%j==0):
            break
        else:
            print(i)
            break

```

```

20
3
5
7
9
11
13
15
17
19

```

## functions and passing arguments

In [57]:

```

def function1(a,b,c):
    c=a+b
    print("hello "*a,end=" ")
    print()
    print("world "*b,end=" ")
    print()
    print(c)

function1(8,6,5)           #order must be the same..

```

```

hello hello hello hello hello hello hello
world world world world world world
14

```

In [59]:

```

def fun(name,roll,cls):
    print("hello %s "%name,"of class",str(cls),"and roll number "+str(roll))

fun("yash",567,"12th")           #order must be the same
fun(roll=21,name="aman",cls=5)   #or use this method

```

```
hello yash of class 12th and roll number 567
hello aman of class 5 and roll number 21
```

## strings and methods

Let a be string then operations possible are:

- len(a)
- enumerate with for loop
- slicing of string using a[x:y]
- if "baī" in a: wala function
- a.split()
- a.splitlines()
- a.split("xyz")
- a.lstrip() a.rstrip() a.strip()
- a.upper() a.lower()
- a.isupper() a.islower()
- a.isdigit() a.isalpha()
- a.isalnum()
- a.find("element") :return -1 if not found
- a.index("element"):return error if nothing found (both can contain other 2 arguments of starting and ending point of search)
- a.count("element")
- a.replace("old","new")
- "desired\_character".join(a.split()) : joins list of elements of a again to a str type.
- a.capitalize(): capitalize first letter of the string
- a.title(): capitalize every first encountered char after a blank space

In [64]:

```
a="gandhi"
print(a[2])
print(a[-1])
print(a[-3])
print("Length is: "+str(len(a)))
```

```
n
i
d
Length is: 6
```

In [65]:

```
# Note: Strings are not mutable!
```

In [70]:

```
a="welcome to the club"
for i in range(len(a)):
    print(a[-(i+1)],a[i],a[-(i+1)],a[i],a[-(i+1)],a[i])
```

```
b w b w b w
u e u e u e
l l l l l l
c c c c c c
  o  o  o
e m e m e m
h e h e h e
t t t
  t t t
o o o o o o
t t t
  t t t
e h e h e h
m e m e m e
o o o
c c c c c c
i i i i i i
```

```
l l l l l l
e u e u e u
w b w b w b
```

In [71]:

```
a="hello world"           #for loop in py is more like for each loop in other language
for i in a:
    print(i,end=" ")
```

```
h e l l o   w o r l d
```

In [75]:

```
a=[1,23+2,4.47,True,"bapu hari laal"]
for i in a:
    print(i)
```

```
1
25
4.47
True
bapu hari laal
```

In [77]:

```
range(len(a))
```

Out[77]:

```
range(0, 5)
```

In [80]:

```
a="hello world"
for i in a:           #for each loop
    print(i)          #cannot use this way when we require position also
                     #hence we use enumerate
```

```
h
e
l
l
o

w
o
r
l
d
```

In [82]:

```
a="hello world"
for i,item in enumerate(a):
    print("Index: ",i,"\tValue: ",item)
```

```
Index: 0  Value: h
Index: 1  Value: e
Index: 2  Value: l
Index: 3  Value: l
Index: 4  Value: o
Index: 5  Value:
Index: 6  Value: w
Index: 7  Value: o
Index: 8  Value: r
Index: 9  Value: l
Index: 10 Value: d
```

In [94]:

```
a="mango lala ka telephone ka chowkidaar"
b="juice pee kar pubg khela"
print(a+b)
print(a,b)

#slicing:
print(a[6:])
print(a[:])
print(a[:10])
print(a[:-3])
print(a[2:6])
print(a[-3:])
print(a[-4:-1])
```

mango lala ka telephone ka chowkidaarjuice pee kar pubg khela  
mango lala ka telephone ka chowkidaar juice pee kar pubg khela  
lala ka telephone ka chowkidaar  
mango lala ka telephone ka chowkidaar  
mango lala  
mango lala ka telephone ka chowkid  
ngo  
aar  
daa

In [95]:

```
#membership:
a="porsche me baitha mochi"
if "bai" in a:
    print("yes")
else:
    print("no")
```

yes

In [97]:

```
#membership:
a="porsche me baitha mochi"
if "bai" not in a:
    print("no")
else:
    print("yes")
```

yes

In [99]:

```
p="""this is a
paragraph written in
triple quotes"""
print(p)
```

this is a  
paragraph written in  
triple quotes

In [105]:

```
#splittig across words

p="""Enumerated power is a political power
specifically delegated to a governmental branch
by a constitution. ...
Enumerated power is also termed as express power."""

print(p.split())
print(type(p.split()[3]))
```



```
print(type(p.split()))
```

```
a=p.split();  
l=a[0]  
print(l[2])  
print(type(l[2]))
```

```
['Enumerated', 'power', 'is', 'a', 'political', 'power', 'specifically', 'delegated', 'to', 'a', 'governmental', 'branch', 'by', 'a', 'constitution.', '...', 'Enumerated', 'power', 'is', 'also', 'termed', 'as', 'express', 'power.']  
<class 'str'>  
<class 'list'>  
3  
<class 'str'>
```

In [107]:

```
# splitting lines
```

```
p="""A sentence is a group of words that  
are put together to mean something.  
A sentence is the basic unit of  
language which expresses a complete thought."""  
p.splitlines()
```

Out[107]:

```
['A sentence is a group of words that',  
'are put together to mean something.',  
'A sentence is the basic unit of ',  
'language which expresses a complete thought.']
```

In [112]:

```
# split across an alphabet
```

```
p="""A sentence is a group of words that  
are put together to mean something.  
A sentence is the basic unit of  
language which expresses a complete thought."""  
p.split("a")
```

Out[112]:

```
['A sentence is ',  
' group of words th',  
't'\n',  
're put together to me',  
'n something.\nA sentence is the b',  
'sic unit of \n1',  
'ngu',  
'ge which expresses ',  
' complete thought.']
```

In [115]:

```
#split about a word
```

```
line="she is a boy but she is a girl she she"  
line.split("she")
```

Out[115]:

```
['', ' is a boy but ', ' is a girl ', ' ', '']
```

In [116]:

```
a="ManGo"  
a=a.upper()  
print(a)  
  
a=a.lower()
```

```
print(a)
```

MANGO  
mango

In [125]:

```
#l and r strip

a="    aaagfdxsaazfxcgj    uiyhgu    "
print(len(a))
print(a)

a=a.lstrip()                #remove leading white space
print(len(a))
print(a)

a=a.rstrip()                #remove ending white space
print(len(a))
print(a)
```

```
44      aaagfdxsaazfxcgj    uiyhgu
40
aaagfdxsaazfxcgj    uiyhgu
25
aaagfdxsaazfxcgj    uiyhgu
```

In [140]:

```
#total strip

a="%%!My Documentsyash"
print(len(a))
a=a.strip()
print(len(a))
```

```
19
19
```

In [153]:

```
a="9354028507"
b="hello"
c="12.32"
d="54"

print(a.isdigit())
print(a.isalpha())
print(a.islower())
print()
print(b.isdigit())
print(b.isalpha())
print(b.islower())
print()
print(c.isdigit())
print(c.isalpha())
print(c.islower())
print()
print(d.isdigit())
print(d.isalpha())
print(d.islower())
```

```
True
False
False
```

```
False
True
True
```

```
False
```

```
False
False
```

```
True
False
False
```

In [162]:

```
a="123"
b="123aQ@"
c="  "

print(c.isspace())
print()

print(a.isdigit())
print(b.isdigit())
print()

print(a.isalpha())
print(a.isalnum())
print(b.isalnum())
```

True

True
False

False
True
False

In [173]:

```
a="hello ka apple"
print(a.find("apple"))           #find from beginning
```

9

In [181]:

```
a="hello pino ndoa fhie subf eubd"
print(a.find("cedwnj"))          #return -1 if nonthng found
print(a.find("pino",90,len(a)))
print(a.index("pino"))           #return an exception error if nothing is found
```

-1
-1
6

In [190]:

```
a="she sells sea shells on the sea shore"
a=a.replace("she","he")
a=a.replace("sea","pond")
a=a.upper()

print(a)
```

HE SELLS POND HELLS ON THE POND SHORE

In [196]:

```
a="i love eating apple in the apple store"
print(a.find("apple"))
print(a.count("apple"))
```

In [199]:

```
a="i love eating apple in the apple store"  
l=a.split()  
"@".join(l)
```

Out[199]:

```
'i@love@eating@apple@in@the@apple@store'
```

In [203]:

```
name="coding blocks"  
print(name.capitalize())  
print(name.title())
```

Coding blocks

Coding Blocks