In [ ]:

```
nested if:

    A nested if statement is an if statement placed inside another
             if statement
```

In [ ]:

```
syntax:

    if(condition):
        statements
        if(condition):
            statements
        else:
            statements
    else:
        statements
```

In [ ]:

```
# i/p: enter your age : 55
# o/p: welcome,you are right age

# i/p: 13
# o/p: you are too young,go away

# i/p: 101
# o/p: you are too old,go away
```

In [3]:

```
age=int(input('Enter age: '))
if(age>21):
    if(age>100):
        print("you are too old,go away")
    else:
        print("welcome,you are right age")
else:
    print("you are too young,go away")
```

```
Enter age: 15
you are too young,go away
```

In [ ]:

```
# user id: 100-200     ---> 50 :  o/p:  invalid user id

# enter pwd:

# fixed pwd: apssdc@123   o/p: WELCOME

# k3jkdhlkhgi

o/p: Invalid password
```

In [6]:

```
userid=int(input('Enter user id: '))
if(userid>=100 and userid<=200):   # 150
    pwd=input("Enter password: ")
    if(pwd=='apssdc@123'):
        print("Welcome")
    else:
        print("Invalid password")
else:
    print("Invalid userid")
```

```
Enter user id: 56
Invalid userid
```

In [ ]:

```
# i/p:  4
       even number
       >10 --- square
        <10  -- cube

# i/p: 3
       odd number
```

In [ ]:

```
LOOPS:


    for loop
    while loop
```

In [ ]:

```
for loop: A for loop is used to execute statements,once for each item in the
       sequence .The sequence may be a list,string,tuple,dictionary,set......
```

In [ ]:

```
for loop syntax:

    for value in range(start,end,stepcount(or) increment/decrement):
        statements
```

In [12]:

```
# 1 to 10 numbers printing

for i in range(1,11):   # i=1  2  3   4  5...........10
    print(i,end=' ')
```

```
1 2 3 4 5 6 7 8 9 10
```

In [14]:

```
# 10 t0 1
for i in range(10,0,-1):
    print(i,end=' ')
```

```
10 9 8 7 6 5 4 3 2 1
```

In [15]:

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

```
0 1 2 3 4 5 6 7 8 9
```

In [16]:

```
# 1 3 5 7 9
for i in range(1,10,2):
    print(i,end=' ')
```

```
1 3 5 7 9
```

In [17]:

```
# 2 4 6 8 10
for i in range(2,11,2):
    print(i,end=' ')
```

```
2 4 6 8 10
```

In [18]:

```
# 10 8 6 4 2
for i in range(10,1,-2):
    print(i,end=' ')
```

```
10 8 6 4 2
```

In [20]:

```
# print your name 50 times
for i in range(50):
    print("apssdc",end=' ')
```

```
apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc
apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc
apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc
apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc apssdc
apssdc apssdc apssdc apssdc apssdc apssdc
```

In [21]:

```
# i/p: 50
# o/p:  0.....................................49
n=int(input())
for i in range(n):
    print(i,end=' ')
```

```
50
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49
```

In [ ]:

```
# i/p: 50
# o/p:  0.....................................49
n=int(input())
m=int(input())
for i in range(n,m+1):
    print(i,end=' ')
```

In [6]:

```
# 1 to 10 numbers total
# total=55

b=int(input())    # 10
total=0
for i in range(b+1):    #  0   1     2      3      4        5         6.........10
    total=total+i  #  0+0=0   0+1=1  1+2=3  3+3=6   6+4=10  10+5=15   15+6=21....55
print(total)      #    0        1      3      6     10        15         21
```

```
10
55
```

In [ ]:

```
# table : 5
# 5 X 1 = 5
  5 X 2 = 10
     .
    .
    .
    .
  5 X 10 = 50
```

In [15]:

```
n=int(input('Enter required table:  '))
for i in range(1,15):
    print(n,'X',i,'=',n*i)
```

```
Enter required table:  5
5 X 1 = 5
5 X 2 = 10
5 X 3 = 15
5 X 4 = 20
5 X 5 = 25
5 X 6 = 30
5 X 7 = 35
5 X 8 = 40
5 X 9 = 45
5 X 10 = 50
5 X 11 = 55
5 X 12 = 60
5 X 13 = 65
5 X 14 = 70
```

In [17]:

```
# factors= 10
# 1 2 5 10
n=int(input())      # 10
for i in range(1,n+1):   # (1,10)    2          3          4          5.....10
    if(n%i==0):   # 10%1==0(T)   10%2==0(T)  10%3==0(F) 10%4==0(F) 10%5==0(T)
        print(i,end=' ')  # 1       2                                  5
```

```
25
1 5 25
```

In [ ]:

```
# prime number:  3 5 7 11 13 17.................

    # i/p: 5
    # o/p:  prime number

    # 3= 1,3
      5= 1,5
      7= 1,7
      11=1,11
     17=1,17
```

In [25]:

```
n=int(input())    # 5
fc=0
for i in range(1,n+1):  # (1,5)
    if(n%i==0):   # 5%1==0(T)   5%2==0(F)   5%3==0(F)   5%4==0(F)  5%5==0(T)
        fc=fc+1    # 0+1=1                                          1+1=2
print("factors count",fc)
if(fc==2):  #(TRUE)
    print("Prime number")
else:
    print("not prime number")
```

```
5
factors count 2
Prime number
```

In [ ]:

```
#  starting range : 1
   ending range : 10

# o/p:  even numbers are : 2 4 6 8 10
        odd numbers are : 1 3 5 7 9
```

In [26]:

```
s=int(input())
e=int(input())
print("Even numbers are :",end=' ')
for i in range(s,e+1):
    if(i%2==0):
        print(i,end=' ')
print("\n odd numbers are: ",end=' ')
for i in range(s,e+1):
    if(i%2==1):
        print(i,end=' ')
```

```
1
10
Even numbers are : 2 4 6 8 10
 odd numbers are:  1 3 5 7 9
```

In [ ]:

```
# i/p: 5
# o/p: factorial= 120
```

In [ ]:

```
perfect number
given number= sum of factors
6= 1 2 3 6 = 1 2 3= 1+2+3=6
28= 1 2  4 7 14 28=  1+2+4+7+14=28
```

In [28]:

```
n=int(input())
fsum=0
for i in range(1,n):
    if(n%i==0):      1,2,3
        fsum=fsum+i    0+1=1   1+2=3   3+3=6
print("factors sum=",fsum)
if(fsum==n):
    print("Perfect number")
else:
    print("Not perfect number")
```

```
6
factors sum= 6
Perfect number
```

In [ ]:

```
while loop:

    while loop is used to execute a block of statements repeatedly until a given is satisfi
```

In [ ]:

```
syntax:

    intialization
    while(condition):
        statements
    incre/decrement
```

In [31]:

```
# 1 to 10 numbers printing
i=1
while(i<=10):
    print(i,end=' ')
    i=i+1
```

```
1 2 3 4 5 6 7 8 9 10
```

In [32]:

```
n=int(input())
i=1
while(i<=n):
    print(i,end=' ')
    i=i+1
```

```
100
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 2
9 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54
55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 8
0 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
```

In [33]:

```
# 10 8 6 4 2
i=10
while(i>=1):
    print(i,end=' ')
    i=i-2
```

```
10 8 6 4 2
```

In [1]:

```
# i/p: 7398
# o/p: digits count= 4
n=int(input())
c=0
while(n>0):   # 475>0(T)   0>0(F)
    n=n//10   #  475=475//10= 47   47//10=4    4//10=0
    c=c+1    #   0=0+1=1            1+1=2       C=3
print("digit count=",c)
```

```
8956
digit count= 4
```

In [35]:

```
475//10
```

Out[35]:

```
47
```

In [4]:

```
# i/p:896
# o/p: 698
n=int(input())
rev=0
while(n>0):   # 678>0(T)       67>0(T)       6>0(T)   0>0(F)
    r=n%10        # 678%10=8    67%10=7   6%10=6
    rev=rev*10+r   # 0*10+8=8   8*10+7=87  87*10+6=876
    n=n//10      # 678//10=67   67//10=6    6//10=0
print("reverse=",rev)
```

```
5785
reverse= 5875
```

In [3]:

```
678%10
```

Out[3]:

```
8
```

In [ ]:

```
# 131
# PALINDROME
```

In [ ]:

```

```

In [ ]:

```

```