Conditional Statements

```
- if
- if else
- elif
- nested if

# elif statement
    - To check multiple conditions at a time

syntax for elif statement
-----------------------
if(condition1):
    statements
elif(condition2):
    statements
elif(condition3):
    statements
elif(condition4):
    statements
..............
else:
    statements

# biggest number in 3 numbers
a,b,c= int(input()),int(input()),int(input())
if(a>b and a>c): # 34>67(F) and 34>89(F)---F
    print(a,"is big number")
elif(b>c): # 67>89(F)
    print(b,"is big number")
else:
    print(c,"is big number")

 34
 67
 89

89 is big number

# 90-100 ---> Excellent
  80-89 ---> Very good
   70-79 ---> A GRADE
   60-69 ----> B GRADE
   50-59 ----> C GRADE
   40-49 ---> D GRADE
  30-39 ----> PASS
  1-29-- FAIL
```

```
marks = int(input('Enter marks: '))
if(marks>=90 and marks<=100):
    print("EXCELLENT")
elif(marks>=80 and marks<=89):
    print("Very Good")
elif(marks>=70 and marks<=79):
    print("A GRADE")
elif(marks>=60 and marks<=69):
    print("B GRADE")
elif(marks>=50 and marks<=59):
    print("C GRADE")
elif(marks>=40 and marks<=49):
    print("D GRADE")
elif(marks>=30 and marks<=39):
    print("PASS")
elif(marks>=1 and marks<=29):
    print("FAIL")
else:
    print("Invalid marks")
```

```
Enter marks:  235

Invalid marks
```

i/p: (0-6) - 3

o/p: wednesday

```
# nested if statement
# syntax for nested if statement
-------------------------------------
if(condition):
    statements
    if(condition):
        statements
    else:
        statments
else:
    statements

i/p: 4
     even
     >10 -----  square
     <10 ------ 4**3=64
o/p: 64
```

```
i/p: 5
o/p: odd

n = int(input())
if(n%2==0):
    print("Even")
    if(n>10):
        print(n**2)
    else:
        print(n**3)
else:
    print("Odd")


 18

Even
324
```

Loops

- for loop
- while loop

```
# for loop:-  It is used to iterate over a sequence
   sequence: string,list,tuple,dict,set

syntax for for loop
---------------------------------------
for value in range(start,end,step_count):
    statements


# print 1 to 10 numbers using for loop
for i in range(1,11):
    print(i,end=' ')

1 2 3 4 5 6 7 8 9 10

for i in range(1,11,1):
    print(i,end=' ')

1 2 3 4 5 6 7 8 9 10

for i in range(1,21,3):
    print(i,end=' ')

1 4 7 10 13 16 19

start,end,st=int(input("start:")),int(input("end:")),int(input("step_c
ount:"))
```

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

```
start: 30
end: 100
step_count: 4
```

```
30 34 38 42 46 50 54 58 62 66 70 74 78 82 86 90 94 98
```

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

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

```
for j in range(50):
    print(j,"vanitha",end=' ')
```

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

```
# 10 to 1 numbers
for i in range(10,0,-2):
    print(i,end=' ')
```

```
10 8 6 4 2
```

```
for i in range(100,0,-3):
    print(i,end=' ')
```

```
100 97 94 91 88 85 82 79 76 73 70 67 64 61 58 55 52 49 46 43 40 37 34
31 28 25 22 19 16 13 10 7 4 1
```

```
s = 0
for i in range(1,11): # 1 2 3
    s = s+i  # 0+1=1 1+2=3 3+3=6 6+4=10 10+5=15.......
print(s)
```

```
55
```

```
# factors of any number
# 10 - 1 2 5 10
n = int(input())
for i in range(1,n+1):
    if(n%i==0):  # 10%10==0
        print(i,end=' ')
```

```
 50

1 2 5 10 25 50

# printing table of any number
n = int(input())
for i in range(10,0,-1):
    print(n,'x',i,'=',n*i)

 8

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

# prime number
# 2 factors
n = int(input())
f_count=0
for i in range(1,n+1):
    if(n%i==0):
        f_count=f_count+1
print("Factors count=",f_count)
if(f_count==2):
    print("prime number")
else:
    print("not a prime number")

 11

Factors count= 2
prime number

# Task - 02
 Write a python program to check whether a number is
   perfect number or not

# i/p: 6
# o/p: perfect number
```