Conditional Statements

1)If statement

In [1]:
```
marks=int(input('Enter marks'))
passs=50
distinction=90
if(marks>=distinction):
    print("Toper")
if(marks>=passs and marks<distinction):
    print("You passed the exam")
if(marks<passs):
    print("You failed the exam")
```

```
Enter marks95
Toper
```

In [ ]:
```
statement="The coffe is bad"
if('bad' in statement):
    print("Bad review")
```

In [2]:
```
statement="Iam very good"
if('bad' in statement):
    print("Good review")
```

In [3]:
```
'z' in "hello"
```

Out[3]:
```
False
```

2) if else Statement

In [4]:
```
if None:
    print("True")
else:
    print("False")
```

```
False
```

In [5]:
```
n=int(input("Enter the number"))
if(n%2==0):
    print("Even")
else:
    print("odd")
```

```
Enter the number2
Even
```

Task

if a number is even then it has to print whether the number is divisible by 4 or not otherwise it has to check whether the number is divisible by 3 or not

In [16]:
```
s=int(input("Enter the number"))
if(s%2==0):
      if s%4==0:
          print("Divisible by 4")
      else:
          print("Not divisible by  4")
else:
      if(s%3==0):
          print("Divisible by 3")
      else:
          print("Not divisible by  3")
```

```
Enter the number4
Divisible by 4
```

In [13]:
```
year=int(input("Enter the  year"))
if((year%400=0)or(year%400==0 and year%100!=0)):
    print("Leap year")
else:
    print("Not leap year")
```

```
Enter the  year2016
Leap year
```

check if a number exists in given range(inclsive)

In [21]:
```
n1=int(input("Enter the number"))
lb=int(input("Enter the lower bound"))
ub=int(input("Enter the upper bound"))
if(n1 in range(lb,ub)):
    print(n1,"It exits")
else:
    print("Not exists")
```

```
Enter the number34
Enter the lower bound2
Enter the upper bound50
34 It exits
```

check if a number is is multiple of 10

In [23]:
```
m=int(input("Enter the number"))
if(m%10==0):
    print(m,"is multiple of 10")
else:
    print(m,"is not a multiple of 10")
```

```
Enter the number20
20 is multiple of 10
```

Check if a number is factor of 100

In [24]:
```
d=int(input("Enter the number"))
if(100%d==0):
    print(d,"is factor of 100")
else:
    print(d,"is not factor of 100")
```

```
Enter the number2
2 is factor of 100
```

Check if given string is equal to a number

In [25]:
```
number=123456
st="python"
if(str(number)==st):
    print("Equal")
else:
    print("not equal")
```

```
not equal
```

calculate the number of nano seconds in a given year (consider leap year logic)

In [26]:
```
year=int(input("Enter the year"))
if(year%400==0 or (year%4==0 and year%100!=0)):
    print(366*24*60*60*(10**9))
else:
     print(365*24*60*60*(10**9))
```

```
Enter the year202
31536000000000000
```

3) elif statement

Find the greatest of 3 numbers

In [27]:
```
a=int(input("Enter the number1"))
b=int(input("Enter the number2"))
c=int(input("Enter the number3"))
if(a>b and a>c):
    print("a is greatest")
elif(b>a and b>c):
    print("b is greatest")
else:
    print("c is greatest")
```

```
Enter the number13
Enter the number25
Enter the number34
b is greatest
```

In [28]:
```
marks=int(input("Enter marks"))
passs=50
distinction=90
if(marks==100):
    print("Perfect")
elif(90<marks<100):
    print("Distinction")
elif(80<marks<90):
    print("First class")
elif(50<marks<80):
    print("Second class")
else:
    print("Failed")
```

```
Enter marks60
Second class
```

4) Nested if

Take an input from keyboard Check the number is positive or negative or zero and display

In [31]:
```
w=int(input("Enter the number"))
if(w>=0):
    if(w==0):
        print("Zero")
    else:
        print("Negative")
else:
    print("Positive")
```

```
Enter the number0
Zero
```

Check the number of digits in a given number

In [32]:
```
n=int(input("Enter number"))
count=0
while(n!=0):
    r=n%10
    count=count+1
    n=n//10
print(count)
```

```
Enter number345
3
```

In [37]:
```
import math
f=int(input("Enter the number"))
print(math.sqrt(f))
print(f**0.5)
```

```
Enter the number3
1.7320508075688772
1.7320508075688772
```

Loops

In [1]:
```
i=1
while(i<=10):
    print(i,end=" ")
    i=i+1
```

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

Task: To print the given string into charcater by character

In [3]:
```
b=input("Enter the string")
i=0
while(i<len(b)):
    print(b[i])
    i=i+1
```

```
Enter the stringsravani
s
r
a
v
a
n
i
```

In [4]:
```
i=3
while(i<=100):
    print(i,end=" ")
    i=i+3
```

```
3 6 9 12 15 18 21 24 27 30 33 36 39 42 45 48 51 54 57 60 63 66 69 72 75 78 81
84 87 90 93 96 99
```

In [5]:
```
i=99
while(i>=3):
    print(i,end=" ")
    i=i-3
```

```
99 96 93 90 87 84 81 78 75 72 69 66 63 60 57 54 51 48 45 42 39 36 33 30 27 24
21 18 15 12 9 6 3
```

Function to print n natural number using for loop

In [8]:
```
def Natural(n):
    for i in range(1,n+1):
        print(i,end=" ")
n=int(input("Enter the number"))
Natural(n)
```

```
Enter the number10
1 2 3 4 5 6 7 8 9 10
```

Iterate the iIterate the integers from 1 to 50, for multiples of 3 print “Fizz” and for multiples of 5 print “Buzz” and for multiples of both 3 and 5 print “FizzBuzz”.

In [3]:
```
m=int(input())
for i in range(1,m+1):
    print(i)
    if(i%3==0):
        print("Fizz")
    if(i%5==0):
        print("Buzz")
    if(i%3==0 and i%5==0):
        print("FizzBuzz")
```

```
15
1
2
3
Fizz
4
5
Buzz
6
Fizz
7
8
9
Fizz
10
Buzz
11
12
Fizz
13
14
15
Fizz
Buzz
FizzBuzz
```

Program to print the multiplication table from range between 10 to 20

In [9]:
```
lb=int(input())
ub=int(input())
n=int(input())
for i in range(lb,ub+1):
    print(n,'x',i,'=',n*i)
```

```
10
20
4
4 x 10 = 40
4 x 11 = 44
4 x 12 = 48
4 x 13 = 52
4 x 14 = 56
4 x 15 = 60
4 x 16 = 64
4 x 17 = 68
4 x 18 = 72
4 x 19 = 76
4 x 20 = 80
```

Print n Natural Numbers using while loop

In [10]:
```
q=int(input())
i=1
while(i<=q):
    print(i,end=" ")
    i=i+1
```

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

Program print n number of iterations using while loop with if statement. Example : a=1,b=1 two variables b==4 loop terminated

In [1]:
```
n=int(input())
i=1
while(i<=n):
    if(i==4):
        break
    else:
        print(i)
    i=i+1
```

```
6
1
2
3
```

In [4]:
```
def Numbers(lb,ub):
    for i in range(lb,ub):
        print(i, end=" ")
lb=int(input())
ub=int(input())
Numbers(lb,ub)
```

```
500
550
500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 5
19 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 53
8 539 540 541 542 543 544 545 546 547 548 549
```

In [11]:
```
def ReverseOfNumber(ub,lb):
   while(ub>=lb):
    print(ub)
    ub=ub-1
lb=int(input())
ub=int(input())
ReverseOfNumber(ub,lb)
```

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

In [3]:
```
def Addition(s,n):
    su=0
    for i in range(s,n+1):
        su=su+i
    print(su)
s=int(input())
n=int(input())
Addition(s,n)
```

```
1
10
55
```

In [7]:
```
 o=[]
def Odd(l,u):
    for i in range(l,u+1):
        if(i%2!=0):
            o.append(i)
    return o
l=int(input())
u=int(input())
Odd(l,u)
print(o[::-1])
```

```
1
10
[9, 7, 5, 3, 1]
```

In [9]:
```
def AverageofRange(l,u):
    s=0
    c=0
    for i in range(l,u+1):
        s=s+i
        c=c+1
    avg=s/c
    print(avg)
l=int(input())
u=int(input())
AverageofRange(l,u)
```

```
2
5
3.5
```

In [1]:
```
#Function to generate sum of factors in a given range
def sumOfFactor(l,u):
    n=int(input())
    s=0
    for i in range(l,u+1):
        if(n%i==0):
            s=s+i
    print(s)
l=int(input())
u=int(input())
sumOfFactor(l,u)
```

```
1
12
12
28
```

In [3]:
```
#Function to check whether the given number is prime
def Prime(n):
    c=0
    for i in range(1,n+1):
        if(n%i==0):
            c=c+1
    if(c==2):
        print("Prime")
    else:
        print("Not prime")
n=int(input())
Prime(n)
```

```
5
Prime
```

In [2]:
```
#Function to calculate the average of first N Prime numbers
def AveragePrime(n):
    ff=0
    s=0
    for i in range(1,n+1):
        c=0
        for j in range(1,i+1):
            if(i%j==0):
                c=c+1
        if(c==2):
            ff=ff+1
            s=s+i
    print(s/ff)
n=int(input())
AveragePrime(n)
```

```
5
3.3333333333333335
```

In [6]:
```
#Function to generate all Perfect numbers in a given range
#Perfect Number - Sum of all its factors is equal to the number itself
#6 - 1, 2, 3
#lb, ub
def PerfectNumber(l,u):
    for i in range(l,u+1):
        c=0
        s=0
        for j in range(1,i+1):
            if(i%j==0):
                s=s+i
                c=c+1
    print(s//c)
l=int(input())
u=int(input())
PerfectNumber(l,u)
```

```
1
6
6
```

In [ ]: