

```
In [1]: 1 ch=input()
2 if ch=='a' or ch=='e' or ch=='i' or ch=='o' or ch=='u':
3     print("Vowel")
4 else:
5     print("Consonant")
6
```

k  
Consonant

```
In [2]: 1 ch = input()
2 # 10 comparisions
3 if(ch=='A' or ch=='a' or ch=='E' or ch=='e' or ch=='I'
4     or ch=='i' or ch=='O' or ch=='o' or ch=='U' or ch=='u'):
5     print(ch, "is a Vowel")
6 else:
7     print(ch, "is a Consonant")
8
```

I  
I is a Vowel

```
In [5]: 1 vowels="aeiouAEIOU"
2 ch=input()
3 # membership operators,
4 if ch in vowels:
5     print("Vowel")
6 else:
7     print("Consonant")
```

Vowel

## Iterating Statements

- looping statements
- Statements to be iterated/repeated for multiple times
- **for**
  - syntax:
    - for iterator in iterable:
      - statements
    - for iterator in range(len(iterable)):
      - statements
- **while**

```
In [3]: 1 # program to print "welcome to python" 10 times
2 ''' welcome to python
3 welcome to python
4 welcome to python
5 .....
6 welcome to python '''
7 for num in range(11,21):
8     print("welcome to python") # single statement
9
```

```
welcome to python
welcome to python
welcome to python
welcome to python
welcome to python
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welcome to python
```

### range()

- pre-defined function in Python
- range of values/data
- [1,11]:1,2,3,4,5,6,7,8,9,10,11(exclusive)
- range(upper bound/stop)
  - starts from 0 by default
- range(lower bound,upper bound)
  - upper bound is exclusive
- [start:stop:step\_count] #
  - [1:11:2] :

```
In [4]: 1 rn=range(30,45) # 14 values
        2 # print the numbers present in range(30 to 45)
        3 print(30) # printing the numbers
        4 print(31)
        5 print(33)
        6 print(45)
        7
        8
30
31
33
45
```

```
In [5]: 1 for num in rn:
        2     print(num)
        3
```

30

```
In [6]: 1 r=range(21) # starts from 0
        2 #print the numbers from 0 to 20 in a line
        3 for num in r:
        4     print(num) # "\n"
        5
```

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```

```
In [7]: 1 for num in r:
        2     print(num,end=" ") # space
        3
```

```
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
```

```
In [8]: 1 # write a python program to print the even no.s present in a range
        2 # num%2=0(remainder)
        3 lw=int(input("lower bound:"))
        4 up=int(input("upper bound:"))
        5 for num in range(lw,up+1): # exclusive
        6     if num%2==0:
        7         print(num,end=" ")
        8
```

```
lower bound:10
```

```
upper bound:50
```

```
10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
```

```
In [9]: 1 # dif=2
        2 # skip=1
        3 for num in range(lw,up+1,2): #
        4     print(num,end=" ")
        5
```

```
10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
```

```
In [10]: 1 # print the multiples of 3 in a range
        2 ''' 3,6,9,12,15,18---mutliples of 3
```

```

3  factors of 12:1,2,3,4,6,12 (<12)
4      multiples of 12:12,24,36,48,60 ..(>12) '''
5
6
7  for num in range(lw,up+1):
8      if num%3==0:
9          print(num,end=" ")
10
11
12 15 18 21 24 27 30 33 36 39 42 45 48

```

```

In [11]: 1  for num in range(2,21,3): # 2 to 20
          2      print(num,end=" ")
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```
Out[18]: 'A'
```

```
In [19]: 1 ord("K") #
```

```
Out[19]: 75
```

```
In [20]: 1 ord("k")
```

```
Out[20]: 107
```

```
In [21]: 1 ord("a")
```

```
Out[21]: 97
```

```
In [22]: 1 for num in range(ord('A'),ord('L')): # numbers
2         print(num,end=" ")
3         print(chr(num),end=" ") #
4
```

```
65 A 66 B 67 C 68 D 69 E 70 F 71 G 72 H 73 I 74 J 75 K
```

```
In [23]: 1 # write a program to find the factors of a number
2         ''' 10:1,2,5,10
3         1 to 10)1,2,3,4,5,6,7,8,9,10---(0):factors
4         30:1,2,3,5,6,10,15,30
5
6         factors:1 to n/2,n '''
7         # write a python program to print multiplication table
8         ''' 9x1=9
9         9x2=18
10        9x3=27
11        ...
12        9x20=180 '''
13        n=int(input("Enter the value:"))
14        print("Multiplication table of",n,end="\n")
15        for num in range(1,11):
16            print(n,"x",num,"=",n*num)
17
```

```
Enter the value:7
```

```
Multiplication table of 7
```

```
7 x 1 = 7
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
7 x 10 = 70
```

```
In [24]: 1 # print the multiplication table of n in reverse order
          2 for num in range(11,1,-1):
          3     print(n,'x',num,"=",n*num)
          4

7 x 11 = 77
7 x 10 = 70
7 x 9 = 63
7 x 8 = 56
7 x 7 = 49
7 x 6 = 42
7 x 5 = 35
7 x 4 = 28
7 x 3 = 21
7 x 2 = 14
```

```
In [26]: 1 # factorial vlaue of n
          2 #n!=n*n-1*n-2*n-3..*n-(n-1)
          3 #5!=5*4*3*2*1=120
          4 fact=1
          5 x=int(input("Enter number:"))
          6 for num in range(x,0,-1):
          7     fact=fact*num # assignment operator
          8 print("factorial of ",x,"is",fact)
          9

Enter number:5
factorial of  5 is 120
```

```
In [27]: 1 f=int(input())
          2 fact=1
          3 for num in range(1,f+1):
          4     fact*=num # assignment operator
          5 print(fact)
          6

5
120
```

```
In [ ]:
```

```
1
```