Double-click (or enter) to edit

```
1 r=float(input("Enter r: "))
2 area=3.14*r**2
3 print("Area: ", area)
```

```
    Enter r: 5.6
    Area:  98.4704
```

```
1 #interview challange, find area of circle in minimum lines of code
2 r=float(input("Enter r: "))
3 print("Area: ", 3.14*r**2)
```

```
    Enter r: 5.6
    Area:  98.4704
```

```
1 #interview challange, find area of circle in minimum lines of code
2 print("Area: ", 3.14*float(input("Enter r: "))**2)
```

```
    Enter r: 5.6
    Area:  98.4704
```

```
1 #interview challange, find area of rectangle in minimum lines of code
2 print("area: ", float(input("Enter l: "))*float(input("Enter b: ")))
```

```
    Enter l: 7.8
    Enter b: 11
    area:  85.8
```

```
1 #interview challange, to convert fahreinheit to Celsius
```

```
1 #interview challange, to calculate compound interest
2 p=float(input("Enter Principal: "))
3 r=float(input("Enter Rate of Interest per month: "))
4 t=float(input("Enter Time span in months: "))
5 print("Amount: ", p*(1+r/100)**t)
6 print("Interst: ", (p*(1+r/100)**t)-p)
```

```
    Enter Principal: 1000
    Enter Rate of Interest: 10
    Enter Time span in months: 1
    Amount:  1100.0
    Interst:  100.0
```

```
1 import math
2 math.pi
```

```
    3.141592653589793
```

```
1 math.inf
```

```
inf
```

```
1 math.sqrt(121)
```

```
11.0
```

```
1 # interview challange, find square root of a number without sqrt() method
2 121**0.5
```

```
11.0
```

interview challange, to swap two numbers with bitwise

1. x = (10)10 = (1010)2
2. y = (8)10 = (1000)2
3. x = x^y = = 1010
4. y = x^y = = (1010)2 = (10)10
5. x= x^y = = (1000)2 = (8)10

▾ interview challange, divide a number without arithmetic operator

- `<<` n is same as *2n
- `>>` n is same as /2n

Note: Bitwise operators only support 'int' data type

```
1   x=10
2   x<<2
```

```
40
```

```
1   x=10
2   x>>2
```

```
2
```

```
1   x=10.00
2   # x>>2  # Bitwise operators only support 'int' data type
```

```
1   ~128 # reverse sign & -1; 128 becomes -128, then -128-1 = -129
```

```
-129
```

```
1   ~-128 # 128-1=127
```

```
127
```

interview challange, reverse of a>b

it is b<=a (do not put b<a)

```
1 no=int(input("Enter a number: "))
2 if no>=0:
3   print("Accept it")
4 print("done")
```

```
    Enter a number: 8
    Accept it
    done
```

```
1 no=int(input("Enter a number: "))
2 if no>=0:
3   print("Entered if block")
4   print("Accept it")
5   print("Exiting if block")
6 print("done")
```

```
    Enter a number: -6
    done
```

```
1 no=int(input("Enter a number: "))
2 if no>=0:
3   print("Accept it")
4 else:
5     print("Rejected it")
6 print("done")
```

```
    Enter a number: 5
    Accept it
    done
```

```
1 # +ve or -ve
2 no=int(input("Enter a number: "))
3 if no>=0:
4   print("no is +ve")
5 else:
6     print("no is -ve")
7 print("done")
```

```
    Enter a number: 0
    no is +ve
    done
```

```
1 # +ve 0 or -ve
2 no=int(input("Enter a number: "))
3 if no>0:
4   print(no, "is +ve")
5 elif no<0:
6     print(no, "is -ve")
```

```
7 else:
8   print(no, "is zero")
9 print("done")
```

```
    Enter a number: 5
    5 is +ve
    done
```

```
1 # take two numbers, print smaller, also check if both are equal
2 n1=int(input("Enter 1st number: "))
3 n2=int(input("Enter 2nd number: "))
4 if n1<n2:
5   print(n1, "is smaller")
6 elif n2<n1:
7   print(n2, "is smaller")
8 else:
9   print("both", n1, "&", n2, "are equal")
```

```
    Enter 1st number: 1
    Enter 2nd number: 1
    both 1 & 1 are equal
```

```
1 #print passing class given percentage
2 # p>60: first
3 # 50<=p<60 : second
4 # 40<=p<50 : third
5 # p<40 : fail
6 per=float(input("Enter percentage: "))
7 if per>=60:
8   print("First class")
9 elif 50<=per and per<60:
10   print("Second class")
11 elif 40<=per and per<50:
12   print("Third class")
13 else:
14   print("Fail")
```

```
    Enter percentage: 32.9
    Fail
```

```
1 # optimized, at most only one block will execute
2 per=float(input("Enter percentage: "))
3 if per>=60:
4   print("First class")
5 elif 50<=per:
6   print("Second class")
7 elif 40<=per:
8   print("Third class")
9 else:
10   print("Fail")
```

```
    Enter percentage: 76.8
    First class
```

```
1 i=0
2 while i<=3:
3   print(i)
4   i+=1
5 print("finally i is", i)
```

```
    0
    1
    2
    3
    finally i is 4
```

```
1 # 10, 20, 30... 100
2 i=10
3 while i<=100:
4   print(i)
5   i+=10
```

```
    10
    20
    30
    40
    50
    60
    70
    80
    90
    100
```

```
1 # 10, 9, 8, ... 1
2 i=10
3 while i>=1:
4   print(i)
5   i-=1
```

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

```
1 # 1 to n, where n entered by user n>0
2 n=int(input("Enter value of n : "))
3 if n>0:
4   i=1
5   while i<=n:
6     print(i)
7     i+=1
```

```
    Enter value of n : 5
    1
    2
```

```
3
4
5
```

```
1 # print series start to end
2 #      start: 3 end: 5    3, 4, 5
3 start=int(input("Enter start : "))
4 end=int(input("Enter end : "))
5 i=start
6 while i<=end:
7   print(i)
8   i+=1
```

```
Enter start : 3
Enter end : 5
3
4
5
```

```
1 # print series start to end
2 #      start: 2 end:-2   2, 1, 0, -1, -2
3 start, end=int(input("Enter start : ")), int(input("Enter end : "))
4 if start<end:
5   i=start
6   while i<=end:
7     print(i, end='', sep=',')
8     i+=1
9 else:
10   i=start
11   while i>=end:
12     print(i, ',', end='')
13     i-=1
```

```
Enter start : 3
Enter end : -4
3 ,2 ,1 ,0 ,-1 ,-2 ,-3 ,-4 ,
```

▾ infinite while loop

    1. Loop will only stop when user wants

    2. uses break statement

```
1 while True:
2   no=input("Enter a number: ")
3   if no=='':
4     break
5 print("Thanks for using code")
```

```
Enter a number: 11
Enter a number: -22
Enter a number: 34
Enter a number: 77
Enter a number: 23546
Enter a number: 0
```

```
Enter a number:
Thanks for using code
```

```python
1 # code should ask the user to guess number, and run until he guesses 28
2 while True:
3   no=float(input("Guess the number: "))
4   if no==28.00:
5     break
6 print("You've correctly guessed number 28")
```

```
Guess the number: 28.2
Guess the number: 28.0000
You've correctly guessed number 28
```

```python
1 # 1. tea  2. coffee 3. colddrink  0. exit ---Error
2 while True:
3   #Menu
4   print("\n1. Tea\n2. Coffee\n3. ColdDrink\n0. exit\n:")
5   ##input
6   ch=int(input(""))
7   #conditional
8   if ch==1:
9     print("Have Tea")
10  elif ch==2:
11    print("Have coffee")
12  elif ch==3:
13    print("Have cold drink")
14  elif ch==0:
15    print("Thanks for using code")
16    break
17  else:
18    print("Erong Choice")
```

```
1. Tea
2. Coffee
3. ColdDrink
0. exit
:
1
Have Tea

1. Tea
2. Coffee
3. ColdDrink
0. exit
:
2
Have coffee

1. Tea
2. Coffee
3. ColdDrink
0. exit
:
3
Have cold drink
```

```
1. Tea
2. Coffee
3. ColdDrink
0. exit
:
8
Erong Choice

1. Tea
2. Coffee
3. ColdDrink
0. exit
:
0
Thanks for using code
```

```python
1 #10 tea   #15 coffee    #30 cold drink    # calculate earnings at end, and how much of each item has earned
2 earnTea, earnCoffee, earnColD=0, 0, 0
3 while True:
4   print("\n1. Rs.10 for tea\n2. Rs.15 for coffee\n3. Rs.30 for cold drink\n0. to end day & show earnings\n:")
5   ch=int(input(''))
6   print("tea:", earnTea, "Coffee:", earnCoffee, "ColdD:", earnColD)   #debug
7   if ch==1:
8     print("Have tea for Rs. 10")
9     earnTea+=10
10    print("tea:", earnTea, "Coffee:", earnCoffee, "ColdD:", earnColD)   #debug
11  elif ch==2:
12    print("Have Coffee for Rs. 15")
13    earnCoffee+=15
14    print("tea:", earnTea, "Coffee:", earnCoffee, "ColdD:", earnColD)   #debug
15  elif ch==3:
16    print("Have Cold Drink for Rs. 30")
17    earnColD+=30
18    print("tea:", earnTea, "Coffee:", earnCoffee, "ColdD:", earnColD)   #debug
19  elif ch==0:
20    print("\n\nDay end\nTea Earning:", earnTea, "\nCoffee Earning:", earnCoffee, "\nCold Drink Earning:", earnColD, "\nTotal Earning:", earnTea+earnCoffee+earnColD)
21    break
22  else:
23    print("Wrong Choice")
```

```
1. Rs.10 for tea
2. Rs.15 for coffee
3. Rs.30 for cold drink
0. to end day & show earnings
:
1
tea: 0 Coffee: 0 ColdD: 0
Have tea for Rs. 10
tea: 10 Coffee: 0 ColdD: 0

1. Rs.10 for tea
2. Rs.15 for coffee
3. Rs.30 for cold drink
0. to end day & show earnings
:
2
```

```
tea: 10 Coffee: 0 ColdD: 0
Have Coffee for Rs. 15
tea: 10 Coffee: 15 ColdD: 0

1. Rs.10 for tea
2. Rs.15 for coffee
3. Rs.30 for cold drink
0. to end day & show earnings
:
2
tea: 10 Coffee: 15 ColdD: 0
Have Coffee for Rs. 15
tea: 10 Coffee: 30 ColdD: 0

1. Rs.10 for tea
2. Rs.15 for coffee
3. Rs.30 for cold drink
0. to end day & show earnings
:
2
tea: 10 Coffee: 30 ColdD: 0
Have Coffee for Rs. 15
tea: 10 Coffee: 45 ColdD: 0

1. Rs.10 for tea
2. Rs.15 for coffee
3. Rs.30 for cold drink
0. to end day & show earnings
:
3
tea: 10 Coffee: 45 ColdD: 0
Have Cold Drink for Rs. 30
tea: 10 Coffee: 45 ColdD: 30

1. Rs.10 for tea
2. Rs.15 for coffee
3. Rs.30 for cold drink
0. to end day & show earnings
:
0
```

```python
1 # no % 10 returns last digit
2 # no // 10 will remove last digit
3 # no /10 will not work in python unlike java,  CPP, etc.
4 no=12345
5 while no>0:
6   d=no%10
7   no=no//10
8   print(no, d)
```

```
1234 5
123 4
12 3
1 2
0 1
```

```python
1 # reverse a number
2 no=12345
3 rno=0
```

```
4 while no>0:
5   d=no%10
6   no=no//10
7   rno=rno*10+d
8   print("no: ", no, "rno: ", rno)
```

```
no:  1234 rno:  5
no:  123 rno:  54
no:  12 rno:  543
no:  1 rno:  5432
no:  0 rno:  54321
```

```
1 # check if number is armstrong
2 no=int(input("Enter number to check armstrong: "))
3 actnum=no
4 arm=0
5 while no>0:
6   d=no%10
7   no=no//10
8   arm=arm+d**3
9   print("no: ", no, "arm:", arm, "d: ", d)
10 if(actnum==arm):
11   print("Armstrong")
12 else:
13   print("Non-Armstrong")
```

```
Enter number to check armstrong: 153
no:  15 arm: 27 d:  3
no:  1 arm: 152 d:  5
no:  0 arm: 153 d:  1
Armstrong
```

```
1
```