```python
In [1]: x,y=2,3
```

```python
In [2]: x
```
```
Out[2]: 2
```

```python
In [3]: y
```
```
Out[3]: 3
```

```python
In [4]: x+y
```
```
Out[4]: 5
```

```python
In [9]: if x==y:
            print("Good")
        else:
            print("Bad")
```

```python
In [10]: type(2.3)
```
```
Out[10]: float
```

```python
In [11]: type(3)
```
```
Out[11]: int
```

```python
In [12]: type('17')
```
```
Out[12]: str
```

```python
In [31]: x=int(input("Enter the number a"))
         y=int(input("Enter the number b"))

         def Abc(x,y):
             if x>y:
                 print(x)
             else:
                 print(y)
```
```
Enter the number a4
Enter the number b4
```

```python
In [24]: num1 = int(input("Enter first no"))
         num2 = int(input("Enter second no"))
         # Adding the two numbers
         sum = num1 + num2
         # Display the sum
         print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))
```
```
Enter first no5
Enter second no6
The sum of 5 and 6 is 11
```

```python
In [26]: year = int(input("Enter a year:"))
         if ((year % 4) == 0 and (year % 100) != 0) or ((year % 400) == 0):
             print("{0} is a leap year".format(year))
         else:
             print("{0} is not a leap year".format(year))
```
```
Enter a year:2002
2002 is not a leap year
```

```python
In [27]: import random
         print(random.randint(0,9))
```
```
8
```

```python
In [28]: kilometers = int(input("Enter value in kilometers"))
         # conversion factor
         conv_fac = 0.621371
         # calculate miles
         miles = kilometers * conv_fac
         print('%0.3f kilometers is equal to %0.3f miles' %(kilometers,miles))
```
```
Enter value in kilometers69
69.000 kilometers is equal to 42.875 miles
```

```python
In [29]: # Solve the quadratic equation ax**2 + bx + c = 0
         # importing complex math module
         import cmath
         # To take coefficient input from the users
         a = float(input('Enter a: '))
         b = float(input('Enter b: '))
         c = float(input('Enter c: '))
         # calculate the discriminant
         d = (b**2) - (4*a*c)
         # find two solutions
         sol1 = (-b-cmath.sqrt(d))/(2*a)
         sol2 = (-b+cmath.sqrt(d))/(2*a)
         print('The solution are {0} and {1}'.format(sol1,sol2))
```
```
Enter a: 4
Enter b: 5
Enter c: 8
The solution are (-0.625-1.2686114456365274j) and (-0.625+1.2686114456365274j)
```

```python
In [36]: def test_prime(n):
             if (n==1):
                 return False
             elif (n==2):
                 return True;
             else:
                 for x in range(2,n):
                     if(n % x==0):
                         return False
                     return True
         no=int(input("Enter the number"))
         if (test_prime(no)) is True :
             print("{0} is a prime no".format(no))
         else:
             print("{0} is not a prime no".format(no))
```
```
Enter the number45
45 is not a prime no
```

```python
In [53]: loop = 1
         choice = 0
         def add(a,b):
             return a+b
         def sub(a,b):
             return a-b
         def mul(a,b):
             return a*b
         def div(a,b):
             return a/b
         while loop == 1:
         # Print what options you have
             print ("Welcome to calculator.py")
             print ("your options are:")
             print ("")
             print("1) Addition")
             print("2) Subtraction")
             print("3) Multiplication")
             print("4) Division")
             print("5) Quit calculator.py")
             print("")
             try:
                 choice = int(input("Choose your option:"))
             except:
                 print("please enter a valid number for option")
             print("")
             print("")
             if choice == 1:
                 x = int(input("Enter 1st no: "))
                 y = int(input("Enter 2nd no:"))
                 print("The answer is",add(x,y))
             elif choice == 2:
                 x = int(input("Enter 1st no: "))
                 y = int(input("Enter 2nd no:"))
                 print("The answer is",sub(x,y))
             elif choice == 3:
                 x = int(input("Enter 1st no: "))
                 y = int(input("Enter 2nd no: "))
                 print("answer is ",mul(x,y))
             elif choice == 4:
                 x = int(input("Enter 1st no: "))
                 y = int(input("Enter 2nd no:"))
                 print("answer is ",div(x,y))
             elif choice == 5:
                 loop = 0
             else:
                 print("please choice a valid option from 1 to 5")
                 choice=0
         print ("Thank-you for using calculator.py!")
```
```
Welcome to calculator.py
your options are:

1) Addition
2) Subtraction
3) Multiplication
4) Division
5) Quit calculator.py

Choose your option:4


Enter 1st no: 6
Enter 2nd no:5
answer is  1.2
Welcome to calculator.py
your options are:

1) Addition
2) Subtraction
3) Multiplication
4) Division
5) Quit calculator.py

Choose your option:5


Thank-you for using calculator.py!
```