Accept input from user and store it in variable and print the value.

```
x=int(input("enter a value"))
print(x)
```

```
enter a value10
10
```

Use of print statements and use of (.format)for printing different data types

```
x=134
y=325.89
z=5978j
print(type(x))
print(type(y))
print(type(z))
```

```
<class 'int'>
<class 'float'>
<class 'complex'>
```

Take 2 numbers as user input and add, multiply, divide, subtract, remainder and print the output (Same operations on floating point input as well)

```
x=int(input())
y=float(input())
print("add",x+y)
print("multi",x*y)
print("sub",x-y)
print("div",x/y)
```

```
54
13
add 67.0
multi 702.0
sub 41.0
div 4.153846153846154
```

Conversion of one unit to another (such as hours to minutes, miles to km and etc)

```
x=float(input())
print(x*60)  #hours to min
print(x*1.60934)  #miles to km
```

```
48
2880.0
77.24832
```

Usage of mathematical functions in python like math.ceil, floor, fabs, fmod, trunc, pow, sqrt etc.

```
import math
x=2.4674
print(math.ceil(x))
y=3.6483
print(math.floor(y))
z=3.7859
print(math.fabs(z))
a=5.7386
print(math.copysign(a,z))
```

```
3
3
3.7859
5.7386
```

Building a mathematical calculator that can perform operations according to user input. Use decision making statement.

```
def add(x, y):
    return x+y
def subtract(x, y):
    return x - y
def multiply(x, y):
    return x * y
def divide(x, y):
    return x / y

print("Select operation.")
print("1.Add")
print("2.Subtract")
print("3.Multiply")
print("4.Divide")

while True:
    choice = input("Enter choice(1/2/3/4): ")

    if choice in ('1', '2', '3', '4'):
        num1 = float(input("Enter first number: "))
        num2 = float(input("Enter second number: "))

        if choice == '1':
            print(num1, "+", num2, "=", add(num1, num2))

        elif choice == '2':
            print(num1, "-", num2, "=", subtract(num1, num2))

        elif choice == '3':
```

```
            print(num1, "*", num2, "=", multiply(num1, num2))

        elif choice == '4':
            print(num1, "/", num2, "=", divide(num1, num2))


        next_calculation = input("Let's do next calculation? (yes/no): ")
        if next_calculation == "no":
          break

    else:
        print("Invalid Input")
```

```
 Select operation.
 1.Add
 2.Subtract
 3.Multiply
 4.Divide
 Enter choice(1/2/3/4): 4
 Enter first number: 4
 Enter second number: 2
 4.0 / 2.0 = 2.0
 Let's do next calculation? (yes/no): 1
 Enter choice(1/2/3/4): 3
 Enter first number: 5
 Enter second number: 6
 5.0 * 6.0 = 30.0
 Let's do next calculation? (yes/no): no
```

x Accepting 5 different subject marks from user and displaying the grade of the student.

```
a=int(input())
b=int(input())
c=int(input())
d=int(input())
e=int(input())
total=a+b+c+d+e;
if total>=90:
  print("10 points")
elif total>80 and total<90:
  print("9 points")
elif total>70 and total<60:
  print("8 points")
else:
  print("Better luck next time")
```

```
 92
 85
 75
 91
 64
 10 points
```

Printing all even numbers, odd numbers, count of even numbers, count of odd numbers within a given range

```
even,odd=0,0
for i in range(1,100):
 if i%2 == 0:
   print(i)
   even+=1

 elif i%2!=0:
   print(i)
   odd+=1

print("Odd:",odd)
print("Even :",even)
```

```
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
```

```
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
```

Compute the factorial of a given number. b) Compute GCD of two given numbers. c) Generate Fibonacci series up to N numbers

```
num =int(input())
factorial = 1
for i in range(1,num + 1):
 factorial = factorial*i
print("The factorial of",num,"is",factorial)

def gcdfun (x, y):
    if (y == 0):
        return x
    else:
        return gcdfun (y, x % y)
x =int (input ())
y =int (input ())
num = gcdfun(x, y)
print("GCD of two number is: ")
print(num)
```

```
49
The factorial of 49 is 608281864034267560872252163321295376887552831379210240000000
452
542
GCD of two number is:
2
```

Check whether the given input is a) palindrome b) strong c) perfect

```
n=int(input())
temp=n
rev=0
while(n>0):
```

```
    dig=n%10
    rev=rev*10+dig
    n=n//10
if(temp==rev):
    print("The number is a palindrome")
else:
    print("The number isn't a palindrome!")

#strong number
sum1=0
temp=n
while(n):
    i=1
    f=1
    r=n%10
    while(i<=r):
        f=f*i
        i=i+1
    sum1=sum1+f
    n=n//10
if(sum1==temp):
    print("The number is a strong number")
else:
    print("The number is not a strong number!")

#perfect number
sum1 = 0
for i in range(1, n):
    if(n % i == 0):
        sum1 = sum1 + i
if (sum1 == n):
    print("The number is a Perfect number")
else:
    print("The number is not a Perfect number!")
```

```
 51
 The number isn't a palindrome!
 The number is a strong number
 The number is a Perfect number
```

Compute compound interest using loop for a certain principal and interest amount

```
p = float(input("Enter the principal amount : "))
t = float(input("Enter the number of years : "))
r = float(input("Enter the rate of interest : "))
ci =  p * (pow((1 + r / 100), t))
print("Compound interest : {}".format(ci))
```

```
 Enter the principal amount : 123
 Enter the number of years : 15
 Enter the rate of interest : 12
 Compound interest : 673.2485883886166
```