All Basic python programming

Syntax:
[expression for item in iterable if conditional]
Example: Common Way:

```
l = []
for i in range(10):
   if i%2:
      l.append(i)
   print(l)
```

Using List Comprehension:

```
ls = [i for i in range(10) if i%2] print(ls)
```

Output:
[1, 3, 5, 7, 9]

Syntax :
{key:value for (key,value) in iterable if conditional}
Example: Common Way:

```
d = {}
for i in range(1,10):
          sqr = i*i
          d[i] = i*i
print(d)
```

Output:
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81}

When you are not clear how many arguments you need to pass to a particular function, then we use ***args** and ****kwargs**

*args Python Example:

```
def sum(*args):
total = 0
    for a in args:
        total = total + a
   print(total)
sum(1,2,3,4,5)
```

Output:

15

```
# check prime number between given range

num1 = int(input("enter range number:="))
num3 = int(input("enter range number:="))
for i in range(num1,num3):
        if i>1:
             for j in range(2,i):
                  if i%j ==0:
                       break
             else:
                print(i,end = ",")
```

```
# Cash withdrawl question.

Cb = 10000
while True:
    wb = int(input("Withdraw balance"))
 try:
```

```
   if cb<wb:
     raise ValueError()
     cb = cb-wb
     print("money sent")
except ValueError():
       print("insufficient balnece")
finally:
       print("Bye")
```

```
# check number is palindrome or not

num = int(input("Enter number"))
str2 = str(num)
str3 = str2[::-1]
if str2 == str3:
    print("the number is a palindrome!")
else:
    print("the number is not a palindrome!")
```

```
# Write a Python function to check whether a
number falls within a given range

def check_range(n):
    if n in range(2,6):
        print( " %s is in the range"%n)
    else :
        print("The number is outside the given
range.")
check_range(5)
```

```python
# check prime number or not prime number

num1 = int(input("enter range number:="))
for i in range(2,num1):
    if(num1%i == 0):
        print("not prime number")
        break
else:
    print(num1,"is prime number")



# print prime number inside the given range and sum of middle number.
num3 = int(input("enter range number:="))
list = []
for num1 in range(2,num3):

    for i in range(2,num1):
        if(num1%i == 0):
            break
    else:

        print(num1, end=" ")
        list.append(num1)
print()
length=len(list)
mid = length//2
sum1 = list[mid] + list[mid - 1]
print("sum of middle:=",sum1)
```

```
print(list,end=" ")
```

```
# reverse of any numbers

x1 = int(input("Enter any number:="))
reverse = 0
while x1 > 0:
    r = x1 % 10
    x1 = x1 // 10
    reverse = reverse * 10 +r
print reverse
```

```
# sum of any numbers

num1 = int(input("sum of any numbers:="))
sum = 0
while num1>0:
    r = num1 % 10
    sum = sum  + r
    num1 = num1 // 10
print(sum)
```

```
# # factorial of any  number

num1 = int(input("Factorial any number:="))
fact = 1
for i in range(1,num1+1):
```

```
    fact = fact*i
print(fact)

# create table of any number

num1 = int(input("Table of any number:="))
num = 10
for i in range(1, num+1):
    print(num1, "*", i, ":=", i * num1)
```

```
# #fibonacciseries

num2 = int(input("Enter any number:="))
n1 = 0
n2 = 1
sum = 0
for m in range(1,num2+1):
    # print(sum, end = "")
    n1 = n2
    n2 = sum
    sum = n1+n2
    print("fibonacciseries:=",sum)

# find odd number

num3 = int(input("find odd number:="))
for y in range(1,num3+1):
    if y%2 != 0:
        print(y , end = " ")
```

```python
# # 1.swap of two numbers

a = int(input("Enter 1st number:="))
b = int(input("Enter 2nd number:="))

a = a+b   # 10+20
b = a-b  # 30-20
a = a-b  # 30-10

print("a:=",a , "b:=",b)

# 2. greatest number among 3 numbers

x1 = int(input("Enter 1st number:-"))
x2 = int(input("Enter 2st number:-"))
x3 = int(input("Enter 3st number:-"))
if x1 > x2 and x1 > x3:
    max = x1
elif x2 > x1 and x2 > x3:
    max = x2
else:
    max = x3
    print("maximum number:-",max)



# 3. find even number and odd number

x = int(input("Enter any number:="))
if x % 2 == 0:
    print("Even number")
```

```
else:
   print("odd number")



# 4. find leap year and not leap year

num = int(input("Enter any numbers for check
leap year and not leap year"))
if num % 4 == 0:
    print("leap year")
else:
    print("not leap year")



# 5. check positive number and negative number

num1 = int(input("Enter number"))
if num1 > 0:
    print("positive number")
elif num1 < 0:
    print("negative number")
else:
    print("why you type 0")
```

```
# Write a Python program to check whether a
given key already exists in a dictionary.

x = {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
def present(x1):
```

```
  if x1 in x:
      print('Key is present ')
  else:
      print('Key is not present')
present(5)
present(9)
```

```
# Write a Python function to multiply all the
numbers in a list.

def multiply(numbers):
    total = 1
    for x in numbers:
        total = total * x
    return total
y = multiply((8, 2, 3))
print("multiple of all tuple numbers",y)
```

```
# you can find first char and last char of any
string.

str = input("enter any string:=")
def mantu(str):
            # reverse name
    # x = str[-1::-1]
    x = str[0:2] + str[-1:-3:-1]

    print(x)
mantu(str)
```

```python
# find average of given number

n = int(input("enter number:="))
n1 = 0
for x in range(1,n):
    n1  = n1+x
    n2 = n1/5
print("average:=",n2)
```

```python
# Write a Python function to multiply all the numbers in a list.

def fn1(list):
    y = 1
    for x in list:
        y = y * x
        print(y)
fn1([4,2,5])
```

```python
# Write a Python function that accepts different values as parameters and returns a list

def fn2(tuple):
    list1 = list(tuple)
    return list1
x1 = fn2((1,5,6,"a",2.5,"mantu"))
```

```
print(x1)
```

```
# create caculator for solving some question

a = int(input("enter 1st number:="))
list3=(input("enter any operator:"))
b = int(input("enter 2st number:="))
for i in list3:
    if i == "+":
        sum = a + b
        print(sum)
    elif i == "-":
        sub = a - b
        print(sub)
    elif i == "*":
        mul = a * b
        print(mul)
    elif i == "/":
        div = a / b
        print(div)
    elif i == "%":
        mod = a % b
        print(mod)
    else:
        print("not match")
```