```
for i in range (1,5,1):
  print(i)
```

```
1
2
3
4
```

```
for i in range (5,0,-1):
  print(i)
```

```
5
4
3
2
1
```

```
for i in range (4):
  print(i)
```

```
0
1
2
3
```

```
for i in range (1,4):
  print(i)
```

```
1
2
3
```

```
# while can take fractional step
i=1
while i<=3:
  print(i)
  i+=0.5
```

```
1
1.5
2.0
2.5
3.0
```

```
# for cannot take fractional step
#for i in range (1,4,0.5):  #throws error
#  print(i)
```

```
for i in range(1, 4):
  for j in range(1, 4):
    print("i:", i, " j:", j)
```

```
i: 1  j: 1
i: 1  j: 2
i: 1  j: 3
i: 2  j: 1
i: 2  j: 2
i: 2  j: 3
i: 3  j: 1
i: 3  j: 2
i: 3  j: 3
```

```
for i in range(1, 6):
  for j in range(1, i+1):
    print(j, " ", end=" ")
  print()
```

```
1
1   2
1   2   3
1   2   3   4
1   2   3   4   5
```

```
# 1
# 1 0
# 1 0 1
# 1 0 1 0
# 1 0 1 0 1
for i in range(1, 6):
  for j in range(1, i+1):
    print(j%2, " ", end=" ")
  print()
```

```
1
1   0
1   0   1
1   0   1   0
1   0   1   0   1
```

```
# 1
# 0 0
# 1 1 1
# 0 0 0 0
# 1 1 1 1 1
for i in range(1, 6):
  for j in range(1, i+1):
    print(i%2, " ", end="")
  print()
```

```
1
0  0
1  1  1
0  0  0  0
1  1  1  1  1
```

```
# 1 2 3 4 5
# 1 2 3 4
```

```
# 1 2 3
# 1 2
# 1
for i in range(5, 0, -1):
  for j in range(1, i+1):
    print(j, " ", end="")
  print()
```

```
1  2  3  4  5
1  2  3  4
1  2  3
1  2
1
```

```
# 5 5 5 5 5
# 4 4 4 4
# 3 3 3
# 2 2
# 1
for i in range(5, 0, -1):
  for j in range(1, i+1):
    print(i, " ", end="")
  print()
```

```
5  5  5  5  5
4  4  4  4
3  3  3
2  2
1
```

```
# 5
# 5 4
# 5 4 3
# 5 4 3 2
# 5 4 3 2 1
for i in range(5, 0, -1):
  for j in range(5, i-1, -1):
    print(j, " ", end="")
  print()
```

```
5
5  4
5  4  3
5  4  3  2
5  4  3  2  1
```

```
# 1
# 2 3
# 4 5 6
# 7 8 9 10
k=1
for i in range(1,5):
  for j in range(1,i+1):
    print(k, "",end="")
```

```
    k+=1
  print()
```

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

```
#         5
#       4 5
#     3 4 5
#   2 3 4 5
# 1 2 3 4 5
space=5
i=1
while i<=5:
  s=1
  while s<=space: #space printing
    print(" ", end=" ")
    s+=1
  j=1
  while j<=i:
    print(j, "", end="")
    j+=1
  i+=1
  space-=1
  print()
```

```
            1
          1 2
        1 2 3
      1 2 3 4
    1 2 3 4 5
```

```
#           1
#         1  2
#       1  2  3
#     1  2  3  4
#   1  2  3  4  5
space=5
i=1
while i<=5:
  s=1
  while s<=space: #space printing
    print(" ", end=" ")
    s+=1
  j=1
  while j<=i:
    print(j, " ", end="")
    j+=1
  i+=1
  space-=1
  print()
```

```
            1
          1  2
```

```
    1  2  3
  1  2  3  4
1  2  3  4  5
```

```
# interview challange capgemini, to print armstrong numbers between 100-999
# 153, 370, 371, 407
for no in range(100, 1000):
  tno=no
  sum=0
  while tno>0:
    d=tno%10
    tno=tno//10
    sum=sum + d**3
  if(sum==no):
    print(no)
```

```
153
370
371
407
```

```
# 0 1 1 2 3 5 8 13 ...
f0,f1=0,1
for i in range(0, int(input("Enter n: "))):
  if i<=1:
    print(i, ",", end=" ")
  else:
    fn=f0+f1
    f0, f1=f1, fn
    print(fn, ",", end=" ")
```

```
Enter n: 10
0 , 1 , 1 , 2 , 3 , 5 , 8 , 13 , 21 , 34 ,
```

```
# interview challange, TCS, to check if given number is part of fibonacci series or not
n=int(input("Enter a number you want to check in fibonacci series: "))
flag=0
f0,f1=0,1
for i in range(0, n+1):
  if i<=1:
    if i==n:
      print(n, "is a part of fibonacci series")
      flag=1
      break
  else:
    fn=f0+f1
    f0, f1=f1, fn
    if fn==n:
       print(n, "is a part of fibonacci series")
       flag=1
    if fn>n:
      break
if flag==0:
  print(n, "is not a part of fibonacci series")
```

```
Enter a number you want to check in fibonacci series: 13
13 is a part of fibonacci series
```

```
# print all leap years between two years specified by user
for y in range(int(input("Enter start year: ")), (int(input("Enter end year: ")))+1):
  if (y%4==0 and y%100!=0) or (y%400==0):
    print(y)
```

```
Enter start year: 2000
Enter end year: 2017
2000
2004
2008
2012
2016
```

```
no1=int(input("Enter a number: "))
no2=int(input("Enter another number: "))
while no1%no2!=0:
  no01, no2=no2, no1%no2
print("GCD:", no2)
```

```
Enter a number: 18
Enter another number: 12
GCD: 6
```

```
# print tble of a number entered by user
no=int(input("Enter number to print table: "))
i=0
while i<=10:
  print(no,"X", i, "=", no*i)
  i+=1
```

```
Enter number to print table: 5
5 X 0 = 0
5 X 1 = 5
5 X 2 = 10
5 X 3 = 15
5 X 4 = 20
5 X 5 = 25
5 X 6 = 30
5 X 7 = 35
5 X 8 = 40
5 X 9 = 45
5 X 10 = 50
```

```
# check if entered no is prime or not
no=int(input("Enter a number: "))
i, flag=2, False
while i<no/2:
  #print(i)
  if(no%i==0):
    flag=True
    break
  i+=1
```

```
if flag==True:
  print("Non-Prime Number")
else:
  print("Prime Number")
```

```
Enter a number: 53
Prime Number
```

```
# print prime numbers between 1-100
for no in range(1, 101):
  i, flag=2, False
  while i<no/2:
    if(no%i==0):
      flag=True
      break
    i+=1
  if flag==False:
    print(no)
```

```
1
2
3
4
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
83
89
97
```

```
'''
1+9=10
2+8=10
...
...
9+1=10
'''
for i in range(1, 10):
  print(i, "+", 10-i, "=", i+(10-i))
```

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

```
# list all numbers from 1 to 50 perfectly divisible by 3 & 5
for i in range(1, 51):
  if (i%3==0) and (i%5==0):
    print(i)
```

```
15
30
45
```

```

```