```
#loops
#for loop
#while loop
#nested loop

#loop inside loop

#example

for i in range(1,11):
  for j in range(1,11):
    print(f'{i},{j}')
```

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

```
#use case


#to work with multi dimensional data
#to find out possible combinations


l1=[1,2,3,4,5]
```

```
l2=[1,2,3,4,5]
for element1 in l1:
  for element2 in l2:
    print(f'L1---{element1}, L2------{element2}')
```

```
L1---1, L2------1
L1---1, L2------2
L1---1, L2------3
L1---1, L2------4
L1---1, L2------5
L1---2, L2------1
L1---2, L2------2
L1---2, L2------3
L1---2, L2------4
L1---2, L2------5
L1---3, L2------1
L1---3, L2------2
L1---3, L2------3
L1---3, L2------4
L1---3, L2------5
L1---4, L2------1
L1---4, L2------2
L1---4, L2------3
L1---4, L2------4
L1---4, L2------5
L1---5, L2------1
L1---5, L2------2
L1---5, L2------3
L1---5, L2------4
L1---5, L2------5
```

```
str1='Jaipur'
str2='Delhi'
for i in str1:
  for j in str2:
    print(f'str1 alphabet {i}, str2 alphabet {j}')
```

```
str1 alphabet J, str2 alphabet D
str1 alphabet J, str2 alphabet e
str1 alphabet J, str2 alphabet l
str1 alphabet J, str2 alphabet h
str1 alphabet J, str2 alphabet i
str1 alphabet a, str2 alphabet D
str1 alphabet a, str2 alphabet e
str1 alphabet a, str2 alphabet l
str1 alphabet a, str2 alphabet h
str1 alphabet a, str2 alphabet i
str1 alphabet i, str2 alphabet D
str1 alphabet i, str2 alphabet e
str1 alphabet i, str2 alphabet l
str1 alphabet i, str2 alphabet h
str1 alphabet i, str2 alphabet i
str1 alphabet p, str2 alphabet D
str1 alphabet p, str2 alphabet e
str1 alphabet p, str2 alphabet l
str1 alphabet p, str2 alphabet h
str1 alphabet p, str2 alphabet i
str1 alphabet u, str2 alphabet D
str1 alphabet u, str2 alphabet e
str1 alphabet u, str2 alphabet l
str1 alphabet u, str2 alphabet h
str1 alphabet u, str2 alphabet i
str1 alphabet r, str2 alphabet D
str1 alphabet r, str2 alphabet e
str1 alphabet r, str2 alphabet l
str1 alphabet r, str2 alphabet h
str1 alphabet r, str2 alphabet i
```

```
t1=(1,2,3,4,5)
t2=(1,2,3,4,5,6,7,8,9,10)
for i in t1:
  for j in t2:
    print(f'{j},{i}')
```

```
1,1
2,1
3,1
4,1
5,1
6,1
7,1
```

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

```
#control statements
#break

#it helps to break the loop prematurely(time se phle)

for i in range(1,6):
  if i ==4:
    break
  print(i)
```

```
1
2
3
```

```
#continue
#skips that particular value and continues with other values

for i in range(1,6):
  if i == 3:
    continue
  print(i)
```

```
1
2
4
5
```

```
#else
#executes after the loop is finished

for i in range(1,4):
  print(i)
else:
  print('loop finished')
```

```
1
2
3
loop finished
```

```
#pass
#as it is
#placeholder

for i in range(1,6):
  if i == 3:
    pass
  print(i)
```

```
1
2
3
4
5
```

```
#infinite loops

#while True:
 # print('infinite loop')


#enumerate function
#when the values are required along with their corresponding index places


fruits=['apple','banana','cherry']
for index, fruit in enumerate(fruits):
  print(index, fruit)
```

```
0 apple
1 banana
2 cherry
```

```
#accessing key and values


d1={'name':'ria','class':12,'rollnumber':32}
for key, value in d1.items():
  print(key,value)
```

```
name ria
class 12
rollnumber 32
```

```
#creating list, dictionary and set using loops
#list comprehension
#dictionary comprehension
#set comprehension


#list comp
l1_squares = [x**2 for x in range(1,11)]
print(l1_squares)

l1_normal = [x for x in range(1,11)]
print(l1_normal)
```

```
[1, 4, 9, 16, 25, 36, 49, 64, 81, 100]
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

```
#dict comp

d1_squares={x: x**2 for x in range(1,11)}
print(d1_squares)


d1_6={x: x*6 for x in range(1,11)}
print(d1_6)
```

```
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}
{1: 6, 2: 12, 3: 18, 4: 24, 5: 30, 6: 36, 7: 42, 8: 48, 9: 54, 10: 60}
```

```
#set comp
set_squares={x**2 for x in range(1,11)}
print(set_squares)


set_10={x*10 for x in range(1,11)}
print(set_10)
```

```
{64, 1, 4, 36, 100, 9, 16, 49, 81, 25}
{100, 70, 40, 10, 80, 50, 20, 90, 60, 30}
```

Start coding or generate with AI.