In [1]:

```
##Answer 1:

X = [[1,2,3],
    [4 ,5,6],
    [7 ,8,9]]

Y = [[9,8,7],
    [6,5,4],
    [3,2,1]]

result = [[X[i][j] + Y[i][j]  for j in range
(len(X[0]))] for i in range(len(X))]

for r in result:
    print(r)
```

```
[10, 10, 10]
[10, 10, 10]
[10, 10, 10]
```

In [2]:

```
##Answer 2:

A = [[1,2,3],
    [4 ,5,6],
    [7 ,8,9]]

B = [[5, 8, 1, 2],
    [6, 7, 3, 0],
    [4, 5, 9, 1]]

result = [[0, 0, 0, 0],
        [0, 0, 0, 0],
        [0, 0, 0, 0]]

for i in range(len(A)):

    for j in range(len(B[0])):

        for k in range(len(B)):
            result[i][j] += A[i][k] * B[k][j]

for r in result:
    print(r)
```

```
[29, 37, 34, 5]
[74, 97, 73, 14]
[119, 157, 112, 23]
```

In [4]:

```
##Answer 4:

import numpy as np
A = np.array([[1, 2], [3, 4]])
B = np.array([[4, 5], [6, 7]])
print("Printing elements of first matrix")
print(A)
print("Printing elements of second matrix")
print(B)
print("Addition of two matrix")
print(np.add(A, B))
```

```
Printing elements of first matrix
[[1 2]
 [3 4]]
Printing elements of second matrix
[[4 5]
 [6 7]]
Addition of two matrix
[[ 5  7]
 [ 9 11]]
```

In [5]:

```
##Answer 5:

import numpy as np
matrix = np.array([[1,2,3],[4,5,6]])
print(matrix)
print("\n")
print(matrix.T)
```

```
[[1 2 3]
 [4 5 6]]


[[1 4]
 [2 5]
 [3 6]]
```

In [6]:

```
##Answer 6:

N = 4
print("The dimension : " + str(N))
res = [list(range(1 + N * i, 1 + N * (i + 1)))
                            for i in range(N)]
print("The created matrix of N * N: " + str(res))
```

```
The dimension : 4
The created matrix of N * N: [[1, 2, 3, 4], [5, 6, 7, 8], [9, 10, 11, 12], [13, 14, 15,
16]]
```

In [7]:

```
##Answer 7:

test_list = [[4, 5, 6], [8, 1, 10], [7, 12, 5]]
print("The original list is : " + str(test_list))
K = 2
res = [sub[K] for sub in test_list]
print("The Kth column of matrix is : " + str(res))
```

```
The original list is : [[4, 5, 6], [8, 1, 10], [7, 12, 5]]
The Kth column of matrix is : [6, 10, 5]
```

In [10]:

```
##Answer 8:

test_list = [["RCB", "in"], ["is", "IPL"], ["Best"]]
print("The original list : " + str(test_list))
```

```
res = []
N = 0
while N != len(test_list):
    temp = ''
    for idx in test_list:
        try: temp = temp + idx[N]
        except IndexError: pass
    res.append(temp)
    N = N + 1

res = [ele for ele in res if ele]
print("List after column Concatenation : " + str(res))
```

```
The original list : [['RCB', 'in'], ['is', 'IPL'], ['Best']]
List after column Concatenation : ['RCBisBest', 'inIPL']
```

In [13]:

```
##Answer 9:

a = "nitin"

b = ""
for i in a:
    b = i + b

if (a == b):
    print("Yes")
else:
    print("No")
```

```
Yes
```

In [14]:

```
##Answer 10:

string = 'amaama'
half = int(len(string) / 2)

if len(string) % 2 == 0:
    first_str = string[:half]
    second_str = string[half:]
else:
    first_str = string[:half]
    second_str = string[half+1:]
if first_str == second_str:
    print(string, 'string is symmertical')
else:
    print(string, 'string is not symmertical')
if first_str == second_str[::-1]:  # ''.join(reversed(second_str)) [slower]
    print(string, 'string is palindrome')
else:
    print(string, 'string is not palindrome')
```

```
amaama string is symmertical
amaama string is palindrome
```