DAY - 1

In [1]:
```
# find transpose of a matrix using inbuilt functions and list comprehension
# ------------------Assignment 1 ------------------------------------------------

matrix = [
    [1,2,4,5],
    [6,7,8,9],
    [10,11,12,13]
]

transpose = [list(row) for row in zip(*matrix)]

print(transpose)
```

```
[[1, 6, 10], [2, 7, 11], [4, 8, 12], [5, 9, 13]]
```

In [4]:
```
matrix = [
    [1,2,4,5],
    [6,7,8,9],
    [10,11,12,13]
]
transpose = [[row[i] for row in matrix] for i in range(len(matrix)+1)]
print(transpose)
```

```
[[1, 6, 10], [2, 7, 11], [4, 8, 12], [5, 9, 13]]
```

In [6]:
```
# share list with out sharing address
# --------------------------Assignment 2-----------------------------------------
lst = [1,2,3]
lst2 = []
lst2 = list.copy(lst)
print(lst)
print(lst2)
print(id(lst))
print(id(lst2))
```

```
[1, 2, 3]
[1, 2, 3]
2688766871168
2688761170432
```

In [7]:
```
# reassign a poped element into a list
# ----------------------------Assignment 3-------------------------------------
lst = [1,2,3,4]
a = lst.pop()
print(a)
print(lst)
lst.append(a)
print(lst)
```

```
4
[1, 2, 3]
[1, 2, 3, 4]
```

DAY - 2

Assignment - 1 Why we can't call the local variables outside the function

becuase of scope local variable scope is only inside that function the variable is temporarly created when we enter into the function and removed from memory when we exit the function so outside the function we can't access it

Assignment - 2 Where to use map() filter() and reduce()

In [4]:
```
# map is used to apply a function to all values
# find square of all values inside a list
lst = [1,2,3,4]
squares = list(map(lambda x:x**2,lst))
print(squares)
```

```
[1, 4, 9, 16]
```

In [5]:
```
# filter is used to applying filters to a group of values
# finding students with more then 50 marks
marks = [10,50,80,40,60]
more_than_50 = list(filter(lambda x:x>50,marks))
print(more_than_50)
```

```
[80, 60]
```

In [6]:
```
# reduce work like accumulator
# used to apply any computation on group of values
# find total salary of all employees in a office

from functools import reduce
salary = [10000,20000,30000,40000,50000]
total_salary = reduce(lambda x,y:x+y,salary)
print(total_salary)
```

```
150000
```

In [ ]:
```

```