CHAPTER-5
DATA STRUCTURES IN PYTHON

```
L = []
def push():
    name = input("Enter name of student: ")
    L.append(name)

def pop():
    if not len(L):
        print("Stack is empty")
    else:
        L.pop()

def display():
    if not len(L):
        print("Stack is empty")
    else:
        for i in range(len(L)-1, -1, -1):
            print(L[i])


while True:
    print("1. Insert record")
    print("2. Delete record")
    print("3. Display")
    choice = int(input("Select operation: "))

    if choice == 1:
        push()
    elif choice == 2:
        pop()
```

```
elif choice == 3:
    display()
else:
    print(" Invalid input ")

to_exit = input("Do you want to exit (y/n): ").lower() == 'y'
if to_exit:
    break
```

★ DATA STRUCTURE

A Data Structure is a named group of data of different data types which is stored in a specific way and can be processed as a single unit. A data structure has well-defined operations, behaviour and properties.

- STACK

A Stack is a linear / sequence or a list of elements in which insertion and deletion can take place only at one end, i.e., Stack's top. Because of this, Stack is called LIFO (last in, first out) data structure.

Stack performs two major operations, viz. PUSH and POP.

(i) When an element is inserted/added on top of the Stack, it is called PUSH operation.

(ii) When an element is deleted/removed from the top of the Stack, it is called POP operation.