The inner function can access variable from the outer function (called closure)

Example:-

```
def Power(exp):
    base = 2
    def inner():
        return base** exp
    return inner()
```

Output:-

```
Power(4)
16
```

Dt: 15/12/25
Day - 12

Data structures:-

Data structures in python are methods of organizing storing, managing data in a program so that it can be accessed, modified & processed efficiently.

In other words, data structures helps us store data in a proper format to perform operations easily

why data structures are important?

- Improve program efficiency
- Reduce complexity
- Make data easy to manage
- Help in solving real-world problems

1 Built-in Data structures

1. List
2. Tuple
3. Set
4. Dictionary

1. List :-

A list is a collection of items stored in a single variable. It is denoted with square brackets "[ ]".

Features:-

- Ordered (index-based)
- mutable (can change values)
- Allows duplicate elements.

examples:-

```
marks = [ 70, 80, 90, 95]

marks [1] = 80
```

common operations:-

Append () - Add element

Remove () - delete element

Pop () - remove last element

Sort () - arrange elements

- Append ().

It helps us to add elements into the list

example:-

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

list.append ( 6)
list

list = [1,2,3,4,5,6]
```

#updating

```
list[0]=0

list = [0,1,2,3,4,5,6]
```

Inserting:

list. insert (6, 7)

list = [1, 2, 3, 4, 5, 6, 7]

- POP ( )

list. POP (6)

list

list = [1, 2, 3, 4, 5, 6]

- Remove()

list. Remove (3)

list

list = [1, 2, 4, 5, 6]