

# Functions

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Function is a name that is given to the memory location where the instructions are stored.

Why function is used?? // Advantages of Functions

1. It is used to decrease the lines of code present.
2. It is used to perform some specific task.
3. It have high re-usability, i.e., it can be used n number of times in the program.
4. It also reduces the code repetition.

## Types of Functions

There are 2 types of functions:

1. In-Built Function
2. User-Defined Function

### In-Built Function:

These are the functions whose task is already defined by the developers.

We can use it wherever we want in the program but we can't change the task that is assigned to it.

Eg: len, id, bool, type, upper, lower etc.

These are classified into 6 types:

1. Utility function
2. Functions on Strings
3. Functions on list
4. Functions on tuple
5. Functions on set
6. Functions on Dictionary

1. Utility Functions: The functions which can be applied on all the data types.

- Eg: len(), id(), type()  
i. len()-len(var/val)  
ii. id()-id(var/value)  
iii. Type()-type(var/val)

2. Functions on String: The Functions designed to work on string data type

- Eg:  
i. Upper()-var.upper()  
ii. Lower()-var.lower()  
iii. Swapcase()-var.swapcase()  
iv. Replace()-var.replace(old,new)  
v. Capitalize()-var.capitalize()  
vi. Title()-var.title()

- vii. Index()-var.index(char)
- viii. Count()-var.count(char)

3. Functions on List: Functions designed to work on list data type.

Eg:

- i. Append()-var.append(val)
- ii. Insert()-var.insert(pos,val)
- iii. Pop()-var.pop(), var.pop(index)
- iv. Remove()-var.remove(val)
- v. Sort()-var.sort(), var.sort(reverse=True)
- vi. Reverse()-var.reverse()
- vii. Count()-var.count(val)
- viii. Index()-var.index(val)

4. Functions on Tuple: Functions designed to work on tuple data type.

Eg:

- i. Count()-var.count(val)
- ii. Index()-var.index(val)

5. Functions on Set: Functions designed to work on set data type

Eg:

- i. Add()-var.add(val)
- ii. Pop()-var.pop()
- iii. Remove()-var.remove(val)
- iv. Union()-var1.union(var2,var3.....,varn)
- v. Intersection()-var1.intersection(var2, var3,..... var n)
- vi. Difference()-var1.difference(var2, var3,... var n)
- vii. Clear()-var.clear()

6. Functions on Dictionary: Functions designed to work on Dictionary data type.

Eg:

- i. Key()-var.keys()
- ii. Value()-var.values()
- iii. Item()-var.items()
- iv. Pop()-var.pop(key)
- v. Get()-var.get(key)
- vi. Popitem()-var.popitem()
- vii. Update()-var.update(dictionary)
- viii. Clear()-var.clear()