

* Types of Functions :-

Basically, there are three types of functions in python :-

1. Built-in-functions
2. User defined functions
3. Anonymous function

1. Built-in-functions :-

- The built in functions are those functions that are pre-defined in Python.
- such as `help()` to ask for help, `min()` to get the minimum value, `print()` to print an object
- Built-in-functions are already present in our Python, and we just have to call them whenever we need them to execute.

List of built-in-functions :-

abs()	Returns absolute value of number.
all()	Returns true when all elements in iterable is true.
any()	Check if any element of an iterable is True.
ascii()	Return String containing Printable Representation.
bin()	Converts decimal number to binary.
bool()	Converts a value to Boolean.
bytearray()	returns array of give byte size.
bytes()	returns immutable bytes object.
callable()	checks if the object is callable.
chr()	Returns a character from an integer.
classmethod()	Returns class method for given function.
compile()	Returns a Python code object.
complex()	Create a Complex Number.
delattr()	deletes the specified attribute from the specified object.
dict()	Returns a dictionary (create)
dir()	Tries to Returns Attributes of Object.
divmod()	Returns a Tuple of Quotient and Remainder.
enumerate()	Returns an Enumerate Object.
eval()	Runs Python Code within Program.
exec()	Executes Dynamically created Program.
filter()	Use a filter function to exclude items in an iterable object.

float()	Returns a floating point number.
format()	formats a specified value.
frozenset()	Returns a frozenset object.
getattr()	Returns the value of specified attribute.
globals()	Returns the current global symbol table as a dictionary.
hasattr()	Returns True if the specified object has the specified attribute.
hash()	Returns the hash value of a specified object.
help()	Executes the built-in help system.
hex()	Converts a number into a hexadecimal value.
id()	Returns the id of an object.
input()	Allowing user input.
int()	Returns an integer input.

others:-

instance()	object()	set()
issubclass()	oct()	setattr()
iter()	open()	slice()
len()	ord()	str()
list()	pow()	sum()
locals()	print()	super()
map()	property()	tuple()
max()	range()	type()
memoryview()	repr()	vars()
min()	reversed()	zip()
next()	round()	

2. User defined functions

- The user defined functions are those define by the user to perform the specific task.
- A function that you define yourself in a program is known as User defined function.
- you can give any name to a user defined function, however you cannot use the Python keyword as function name.
- def keyword is used to user defined function, followed by the function name.
 - function name is followed by the parameters in parenthesis (), followed by colon.

```
def function_name (parameter 1, parameter 2)  
    statements  
    ...
```

Example of a user defined function:-

Program to use the user defined function.

```
def addnum(x,y):  
    sum = x+y  
    return sum
```

```
n1 = 5  
n2 = 6  
print("The sum is", addnum(n1, n2))
```

⊛ Calling a user defined function:

```
def fun():  
    print("Inside function")
```

```
- fun() # calling a function.
```

Output:

Inside function

Python Anonymous Function :-

- Anonymous function is also known as lambda function.
- In Python, an anonymous function is a function that is defined without a name.
- anonymous functions are defined using `lambda` keyword.

Syntax of lambda function in Python:-

```
lambda arguments : expression
```

A lambda function is a small anonymous function, which can take any number of arguments, but can have only one expression.

example:

```
lambda x : print(x)
```

```
lambda x,y : x+y
```


* Lambda function contain multiple parameters :-

Example:-

```
sum = lambda x, y, z: x + y + z
```

```
sum(5, 10, 15)
```

```
30
```

* parameterless lambda function :-

Example:-

```
(lambda x: x * x)(5)
```

```
25
```

Above, `lambda x: x * x` defines an anonymous function and call it once by passing arguments in the parenthesis `(lambda x: x * x)(5)`.