Python Functions

- **Functions :-** In Python, a function is a group of related statements that performs a specific task.

- Function are the subprograms, it help break our program into smallar chunks

- It avoids repetition and makes the code reusable.

- A function can return data as a result.

Creating a Function (Syntax of function) :-

```
def function_name(parameters):
    """docstring"""
    statement(s)
```

Keyword

⇒ function blocks begin with Keyword def, followed by function name and parentheses ().

⇒ Parameters (arguments) through which we pass values to function. They are optional.

⇒ colon (:) to mark the end of function header

⇒ docstring (documentation string) optional to describe what the function does.

⇒ statements The function body contains one or more statements.
(Statements must have same identation level (usually 4 spaces)).

⇒ An optional return statement to return a value from the function.

Example:-

```
def my_fun():
    print('jpwebdevelopers')

myfun()
```

→ def (keyword)
my-fun (function name)

Docstring

→ The first string after the function is called the Document string or Docstring in short.

→ This is used to describe the functionality of the function.

→ The use of docstring in functions is optional but it is considered a good practice.

> Note :- we can also use triple """ quotations to create docstrings.

- Declaring Docstrings :- The docstrings are declared using ''' triple single quotes ''' or """ triple double quotes """ just below function defination.

Accessing Docstrings :- The docstrings can be accessed using the __doc__ method of the object or using the help function.

example :-

Example

```
          def square(a):
docstring→    '''Returned argument a is squared'''

              return a**a
        ...
        print(square.__doc__)
```

* Calling a function

⇒ calling a function is very simple, we just have to write the name of the function along with the closing parenthesis.

example

```
def myfun()
    print("Hello from a function")


myfun()
```

⇒ If the function requires some arguments then we wrote those in the Parenthesis.

* Arguments

Information can be passed into functions as arguments.

→ Arguments are specified after the function name, inside the parentheses.

→ you can add as many arguments as you want, just separate with a comma.

for example

```
def fun2(fname, lname):
    print(fname + " " + lname)

fun2("Palvi", "Arora")
```

* The return statement

The return statement is used to exit a function and go back to the place from where it was called.

Syntax of return

```
def fun():
    statements
    .
    .
return [expression]
```

Example

```
def myfun2()
    return 3+3

print(myfun2())
```

* Advantages of functions in Python.

There are the following advantages of Python functions:-

- Using functions, we can avoid rewriting the same code again and again in a program.

- we can call Python functions multiple times in a program and anywhere in a program.

- It improving clarity of the code.

- It make programs simpler to read and understand.

- Reusability is main advantage of Python function

We can track a large Python Program easily when it divided into multiple functions.