Functions

A function is a group of related statements that performs a specific task.

- Functions break the program into smaller and modular chunks.
- Functions makes large programs more organized & manageable.
- Also makes the code reusable and avoids repetition

Syntax of Function

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

Keyword def that marks the start of the function header.

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

Functions- Examples


```
# functions in python are created using def statement
def name_of_great_philospher():
  print ('Bertrand Arthur William Russell')

name_of_great_philospher()
```

```
Bertrand Arthur William Russell
```

```
# One can pass arguments to functions
# name is an argument for the function name_of_philosphers

def name_of_philospher(name, country):
  print (name,country)


name_of_philospher('Bertrand Arthur William Russell', '- United Kingdom')
```

```
Bertrand Arthur William Russell - United Kingdom
```

Dictionary

- Python dictionary is an un-ordered collection of items. Each item of a dictionary has a key/value pair.
- Dictionaries are optimized to retrieve values when the key is known.

Creating Python Dictionary

- Creating a dictionary is as simple as placing items inside curly braces {} separated by commas.
- An item has a key and a corresponding value that is expressed as a pair (**key: value**).
- While the values can be of any data type and can repeat, keys must be of immutable type (string, number or tuple with immutable elements) and must be unique.

Dictionary- Examples

INTERNSHIPSTUDIO

Python dictionary is an unordered collection of items. Each item of a dictionary has a key/value pair.

```
[ ]  #Accessing Values in Dictionary
     dict = {'Name': 'Zara', 'Age': 7, 'Class': 'First'}
     print ("dict['Name']: ", dict['Name'])
     print ("dict['Age']: ", dict['Age'])
```

```
dict['Name']:  Zara
dict['Age']:  7
```

```
[ ]  # Dictionaries are data structures used to map key to values

     philosphers = {"United Kingdom":"Bertrand Russell", "Germany":"Karl Marx"}

     print (philosphers["United Kingdom"])
     print (philosphers["Germany"])
```

```
Bertrand Russell
Karl Marx
```

Dictionary

Built-in methods to be used on dictionaries

Method	Description
clear()	Removes all the elements from the dictionary
copy()	Returns a copy of the dictionary
fromkeys()	Returns a dictionary with the specified keys and value
get()	Returns the value of the specified key
items()	Returns a list containing a tuple for each key value pair
keys()	Returns a list containing the dictionary's keys
pop()	Removes the element with the specified key
popitem()	Removes the last inserted key-value pair
setdefault()	Returns the value of the specified key. If the key does not exist: insert the key, with the specified value
update()	Updates the dictionary with the specified key-value pairs
values()	Returns a list of all the values in the dictionary

Quiz

Q.1 What are the Functions in Python?

Q.2 Create a function doing multiplication of two numbers.

Q.3 What is the syntax of Functions in Python?

Q.4 Which keyword marks the start of the function header ?

Q.5 What are Dictionaries?

Q.6 What is the syntax of Dictionary?