Python – Basics

Digital Lync

INNOVATION - EDUCATION - INCUBATION

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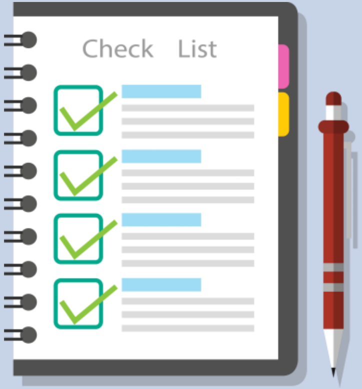


Python Basics

•Functions

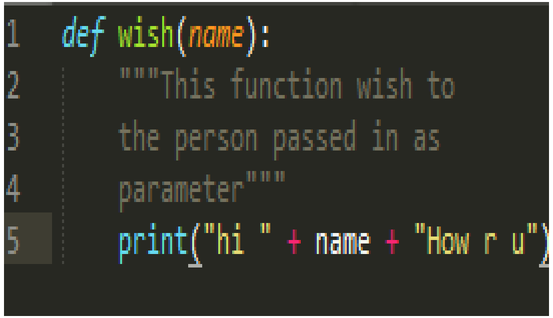
- Introduction
- Function call and Return
- Scope and Lifetime
- Types of functions

Functions

- A function is a group of related statements that perform a specific task.
- Functions help break our program into smaller and modular chunks. As our program grows larger and larger, functions make it more organized and manageable.

Syntax of functions :

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



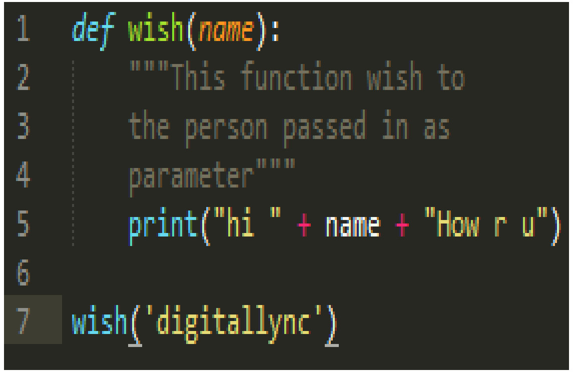
```
def wish(name):
    """This function wish to
    the person passed in as
    parameter"""
    print("hi " + name + "How r u")
```

- Keyword def marks the start of function header.
- Parameters (arguments) through which we pass values to a function.
- A colon (:) to mark the end of function header.
- Optional documentation string (docstring) to describe what the function does.
- One or more valid python statements that make up the function body.
- return statement to return a value from the function.

Functions

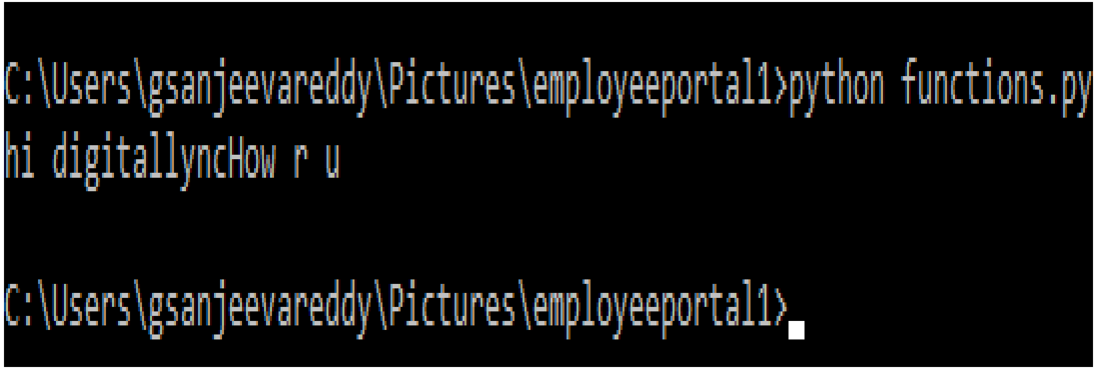
Function Call:

- Once we have defined a function, we can call it from another function, program or even the Python prompt. To call a function we simply type the function name with appropriate parameters.
- **For example:**



```python
def wish(name):
    """This function wish to
    the person passed in as
    parameter"""
    print("hi " + name + "How r u")

wish('digitallync')
```



```
C:\Users\gsanjeevareddy\Pictures\employeeportal1>python functions.py
hi digitallyncHow r u

C:\Users\gsanjeevareddy\Pictures\employeeportal1>
```

Functions

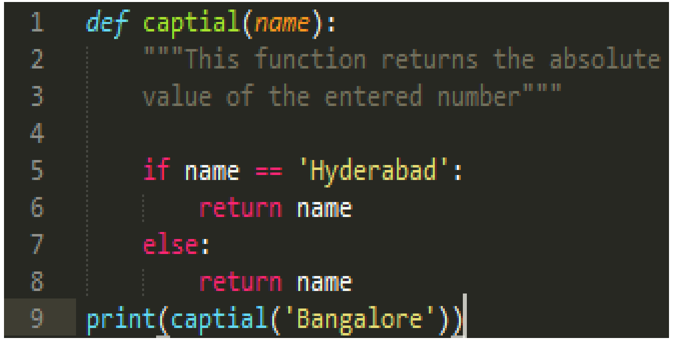
Return Statement:

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

•**Syntax :**

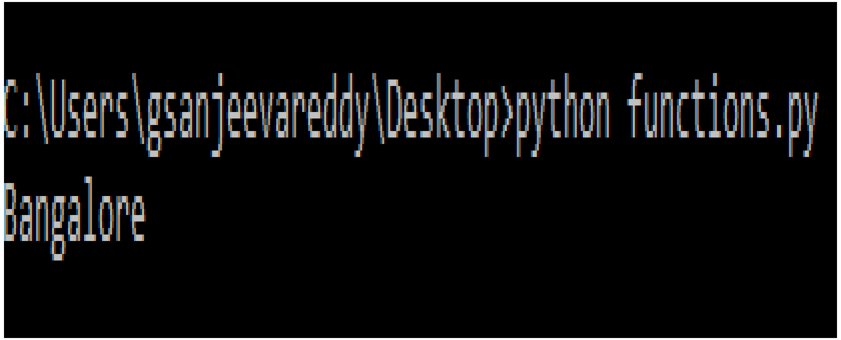
» return [expression_list]

»This statement can contain expression which gets evaluated and the value is returned. If there is no expression in the statement or the return statement itself is not present inside a function, then the function will return the None object.



```python
def captial(name):
    """This function returns the absolute
    value of the entered number"""

    if name == 'Hyderabad':
        return name
    else:
        return name
print(captial('Bangalore'))
```



```
C:\Users\gsanjeevareddy\Desktop>python functions.py
Bangalore
```

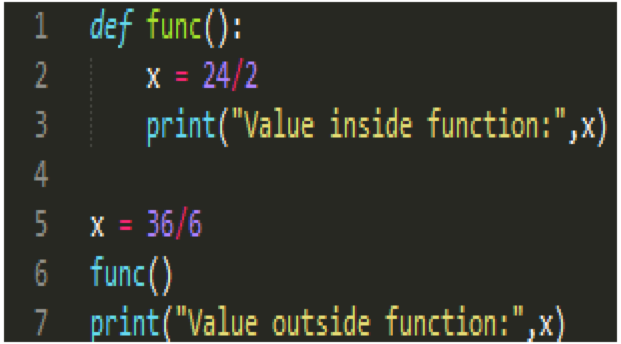
Functions

Scope and Lifetime Of Variables:

» Scope of a variable is the portion of a program where the variable is recognized. Parameters and variables defined inside a function is not visible from outside. Hence, they have a local scope.

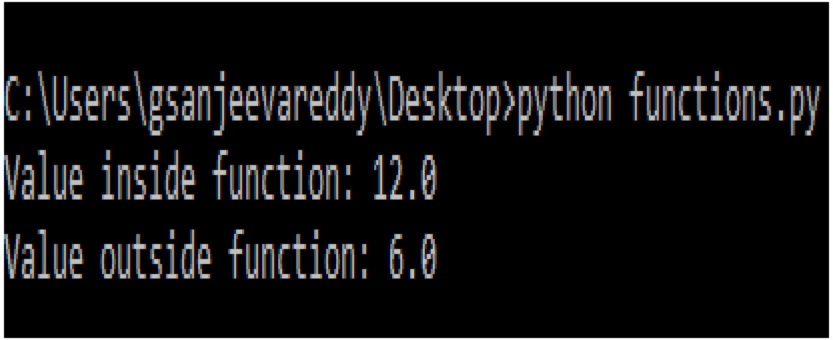
» Lifetime of a variable is the period throughout which the variable exits in the memory. The lifetime of variables inside a function is as long as the function executes.

» They are destroyed once we return from the function. Hence, a function does not remember the value of a variable from its previous calls.



```python
def func():
    x = 24/2
    print("Value inside function:",x)

x = 36/6
func()
print("Value outside function:",x)
```



```
C:\Users\gsanjeevareddy\Desktop>python functions.py
Value inside function: 12.0
Value outside function: 6.0
```

Functions

Types of functions:

Built-in functions - Functions that are built into Python.

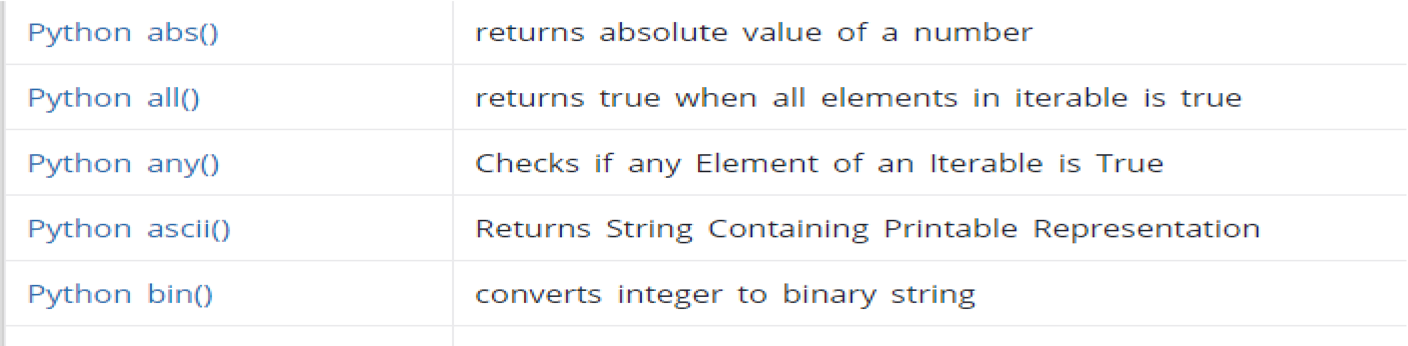
User-defined functions - Functions defined by the users themselves.

Built-in functions:

»The Python interpreter has a number of functions that are always available for use. These functions are called built-in functions. For example, print() function prints the given object to the standard output device (screen) or to the text stream file.

»In latest version there are 68 built-in functions.

Some built-in functions:



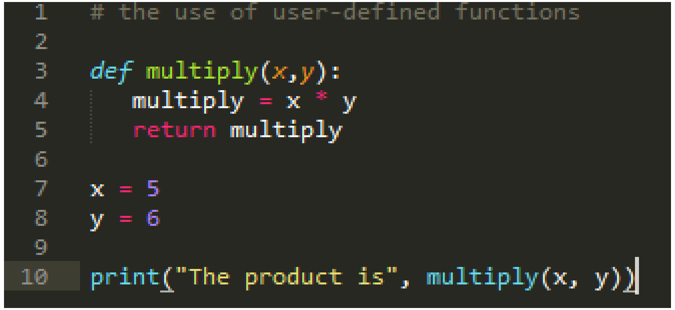
Python abs()	returns absolute value of a number
Python all()	returns true when all elements in iterable is true
Python any()	Checks if any Element of an Iterable is True
Python ascii()	Returns String Containing Printable Representation
Python bin()	converts integer to binary string

Functions

Userdefined functions:

»Functions that we define ourselves to do certain specific task are referred as user-defined functions.

Example:

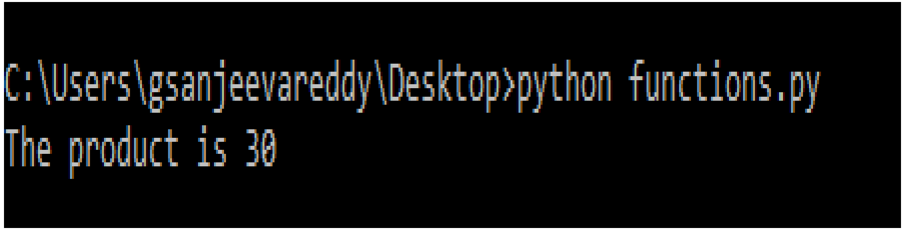


```python
# the use of user-defined functions

def multiply(x,y):
    multiply = x * y
    return multiply

x = 5
y = 6

print("The product is", multiply(x, y))
```



```
C:\Users\gsanjeevareddy\Desktop>python functions.py
The product is 30
```

» we have defined the function multiply() which multiply two numbers and returns the result.

» It is always a good idea to name functions according to the task they perform.

Assignment

1. Write a Python program to sum all the items in a list by using funtion.
2. Write a Python program to get the largest number from a list by using funtion.
3. Write a Python program to remove duplicates from a list by using funtion.
4. Write a Python program to check a list is empty or not by using funtion.