**Python Basic Assignment 3**

1. **Why are functions are advantageous to have in your programs**

In Python, a function is a group of related statements that performs a specific task. With the help of Functions, we can break our program into smaller and modular chunks. So, when our program grows larger and larger, functions help us to make it more organized and manageable. Furthermore, with the help of function, we can avoid repetition and makes our code reusable.

1. **When does the code in a function run: when it’s specified or it’s called**

Defining a new function does not make the function run. To do that we need a **function call**. Function calls contain the name of the function being executed followed by a list of values, called *arguments*, which are assigned to the parameters in the function definition.

1. **What statement creates a function**

To create a function, we must first declare it and give it a name, the same way we'd create any variable, and then we follow it by a function definition. We could put any code inside that function - one statement, multiple statements - depends on what we want to do.

1. **What is the difference between a function and a function call**

A Function is block of code that accepts some values processes the desire task on it and returns the result value.   
Using a function to do a particular task any point in program is called as function call.  
So the difference between the function and function call is: A function is procedure to achieve a particular result while function call is using this function to achieve that task.

1. **How many global scopes are there in a Python program How many local scopes**

The **scope** of a name defines the area of a program in which you can unambiguously access that name, such as variables, functions, objects, and so on. A name will only be visible to and accessible by the code in its scope. Several programming languages take advantage of scope for avoiding name collisions and unpredictable behaviors. Most commonly, you’ll distinguish two general scopes:

1. **Global scope:** The names that you define in this scope are available to all your code.
2. **Local scope:** The names that you define in this scope are only available or visible to the code within the scope.
3. **What happens to a variables in local scope when the function call returns**

A local variable retains its value until the next time the function is called. A local variable becomes undefined after the function call completes. The local variable can be used outside the function any time after the function call completes. The local variable can be used outside the function any time after the function call completes.

1. **What is the concept of a return value Is it possible to have a return value in an expression**

The Python [return statement](https://en.wikipedia.org/wiki/Return_statement) is a key component of [functions](https://realpython.com/defining-your-own-python-function/) and [methods](https://realpython.com/python3-object-oriented-programming/#instance-methods). We can use the return statement to make our functions send Python objects back to the caller code. These objects are known as the function’s **return value**. We can use them to perform further computation in our programs. Using the return statement effectively is a core skill if we want to code custom functions that are [Pythonic](https://realpython.com/learning-paths/writing-pythonic-code/) and robust. In Python, we can return multiple values from a function.

1. **If a function does not have a return statement, what is the return value of a call to the function**

If the return statement is without any expression, then the special value None is returned. Return statement cannot be used outside the function.

1. **How do you make a function variable to the global variable**

**Global variables** are those which are not defined inside any function and have a global scope whereas **local variables** are those which are defined inside a function and its scope is limited to that function only. In other words, we can say that local variables are accessible only inside the function in which it was initialized whereas the global variables are accessible throughout the program and inside every function.

If our function has a local variable with same name as global variable and we want to modify the global variable inside function then use 'global' keyword before the variable name at start of function.

1. **What is the data type of none**

None is used to define a null value. It is not the same as an empty string, False, or a zero. It is a data type of the class NoneType object. Assigning a value of None to a variable is one way to reset it to its original, empty state.

1. **What does the sentence import areallyourpetsnamederic do**
2. **If you had a bacon() feature in spam module, what would you call it after importing spam**
3. **What can you do to save a program from crashing if it encounters an error**

If an error occurs in a program, we don’t want the program to unexpectedly crash on the user. Instead, error handling can be used to notify the user of why the error occurred and gracefully exit the process that caused the error.

1. **What is the purpose of the try clause? What is the purpose of the except clause?**

The try and except block in Python is used to catch and handle exceptions. Python executes code following the try statement as a “normal” part of the program. The code that follows the except statement is the program’s response to any exceptions in the preceding try clause.