ASSIGNMENT 3

1. Why are functions advantageous to have in your program?

The main advantages of functions are

- **Reusability of code (Reduces the lines of code)**
- **Abstraction and encapsulation mechanisms (hiding the implementation details)**
- **Better readability (Breaking a program into small functions to get better efficiency)**
- **High scalability (adding new functions will increase the functionality without affecting rest of the code)**

2. When does the code in a function run: when it's specified or when it's called?

The code inside a function will run when it's called. It can be called by function name with parenthesis.

Example:

```
def addition(x,y):
    sumOfElements = x+y
    print(sumOfElements)
x = int(input("Enter the sum of first number: "))
y = int(input("Enter the sum of second number: "))
print("Before function call sum is not printed")
addition(x,y)
print("After function call sum is printed ")
```

From the above example, code inside a function is defined but it will be executed only when it's called.

3. What statement creates a function?

In python function is created by using 'def' statement. We can create with parameter or without parameter.

Syntax for creating a function :

```
def function_name(parameters)
```

Example:

Function without parameter

```
# function definition

def printText():

            print("Hi,Surya")

# function call

printText()
```

Function with parameter

```
# function definition

def divide(x,y):

   Division = x/y

   print(Division)


x = int(input("Enter the value of x: "))

y = int(input("Enter the value of y: "))

# function call

divide(x,y)
```

4. What is the difference between a function and a function call?

FUNCTION	FUNCTION CALL
- **Function is a block of code**	- **Function call is method of executing the defined function**
- **It can be created by using ‘def” statement.**	- **When a function is called, the program jumps to the function definition.**

- **Snippet**
def add(x,y):
sum = x+y
Print(sum)
	- **Snippet:**
	add(10,20)

- **The above snippet represents the function definition with parameters.**	- **The above snippet explains the calling of function.**

5. How many global scopes are there in a Python program? How many local scopes?

In Python there can be only one global scope but multiple local scopes.

Global scope – It can be declared outside the function, and it can be accessed anywhere in the program.

Local scope – It can be declared inside the function, and it can be accessed only within the function.

Snippet:

```
global_variable = "Hi, I am a Global Variable" #global scope

        def dummy():

                 local_variable = "Hi, I am a Local variable" #local scope

                print(local_variable)

                print(global_variable)

        dummy()
```

6. What happens to variables in a local scope when the function call returns?

Local variables will have access only inside the function. When the execution of function is done the values in local scope will be cleared and variables will be deallocated.

```
Def  printText():

X = 10

return x

print(printText())

print(print(x))
```

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

The return value in the function will return values to the function and the values will be executed when the function is called. Yes, it is possible to return values in expression.

Snippet:

```
def multiply(a,b):

   return a*b

a = int(input("Enter the value for a: "))

b = int(input("Enter the value for b: "))

print(multiply(a,b))
```

8. If a function does not have a return statement, what is the return value of a call to that function?

It will simply prints the values inside the function and it will print none.

Snippet :

```
def display(name):
   print(f"Hello, {name}")
name = input("Enter the name: ")
result = display(name)
print(result)
```

9. How do you make a function variable refer to the global variable?

To make function variable refer to the global variable 'global' keyword is used

Snippet:

```
global_variable = 10
              def printGlobalVariable():
                 global global_variable
                 global_variable = 15
              print(global_variable)
              printGlobalVariable()
              print(global_variable)
```

10. What is the data type of None?

It is a NoneType. It represents the null value.

```
name = None
print(name is None)
```

11. What does the sentence import areallyourpetsnamederic do?

It is not a python library or module that contains pre-defined functions and classes.

12. If you had a bacon() feature in a spam module, what would you call it after importing spam?

```
Import spam
Spam.bacon()
```

13. What can you do to save a programme from crashing if it encounters an error?

To prevent the program from crashing, use error handling techniques.

14. What is the purpose of the try clause? What is the purpose of the except clause?

Try clause and except clause are used to handle errors in the program. Inside the try clause the code will run when there is no error whereas except clause will execute when there is error in the code