Python Assignment 3

1. Advantages of having functions in our program are:

* Code Reusability - Function allows you to reuse the code multiple times without duplication
* Modularity - Function breaks down the complex problems into smaller manageable tasks.
* Encapsulation - Functions encapsulate operations, hiding implementation details
* Code organization - Help in organizing code into logical units improving maintainability
* Readability - Functions with meaningful names enhance code readability and understandability

1. The code in the function is executed only when it’s called
2. def statement is used to create a function in python

def function\_name(parameters):

#Function body

#Code

1. A function is a reusable code that performs a specific task or set of instructions. Function call is known as invoking or executing a function is using function to perform specific task

Function:

def add(a,b):

print(a+b)

Function call:

add(10,30)

1. Global scopes - Global scopes are created when variables or objects are defined at the top level of a program outside any function or class. There can be multiple global scopes in a Python program.

Local scopes - Local scopes are created when functions or classes are defined. Each function has its own local scope. There can be multiple local scopes in a Python program

1. When the function call returns the local scope associated with that function is destroyed and variables defined within that local scope are no longer accessible.
2. A return value is the value that function returns back to its caller when it finishes executing. It allows functions to pass data or results back to the part of the program that invoked them. Yes, it is possible to use a return value in an expression by directly using the function call or assigning to variable for further computation.

Eg:

def calculate\_sum(a, b):

sum = a + b

return sum

result = calculate\_sum(3, 4) \* 2

print(result)

1. If a function does not have a return statement the function call will still return a value however the return value will be None.
2. To make a function variable refer to a global variable we can use the global keyword. Define the global variable outside any function typically at the top level of the code. Use global keyword within the function.

count = 1

def increment():

global count

count+=1

increment()

print(count) → Prints a value of 2

1. The datatype of None is called NoneType
2. As ‘allyourpetsnamederic’ is not recognized as a module or package name. Therefore importing this will give ModuleNotFoundError indicating specified module is not found.
3. We would call bacon function like this - spam.bacon()
4. To save a program from crashing when encountering an error, implement error handling using try-except blocks, handle specific exceptions, and use logging to record errors. Validate input and implement a graceful exit strategy.
5. The purpose of the try clause is to enclose a block of code that might raise an exception. It allows you to specify the code segment that should be attempted and monitored for potential exceptions.

The purpose of except class is to define the actions to be taken when a specific exception occurs within the corresponding try block. It allows you to handle specific types of exceptions and provide error handling or recovery mechanisms.