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**BSc Computer Science.**

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**Discussion Assignment Unit 2.**

I have explained each piece of code using comments in the code.

**Example 1**: Define a function that takes an argument. Call the function. Identify what code is the argument and what code is the parameter.

# This defines a function named "print\_goodmorning" that takes a parameter named "name"

def print\_goodmorning(name):

    print("Hello, " + name + "!")

# Call the function and provide the argument "Bob"

print\_goodmorning("Bob")

**Example 2**: Call your function from Example 1 three times with different kinds of arguments: a value, a variable, and an expression. Identify which kind of argument is which.

# example 2

#In this code I define a function named "print\_goodmorning" that takes a parameter named "name"

def print\_goodmorning(name):

    print("Hello, " + name + "!")

# Call the function with different kinds of arguments

# 1. Call the function with a value as an argument

print\_goodmorning("Bob")

# 2. Call the function with a variable as an argument

username = "Evans"

print\_goodmorning(username)

# 3. Call the function with an expression as an argument

print\_goodmorning("Mr. " + "Smith")

**Example 3**: Construct a function with a local variable. Show what happens when you try to use that variable outside the function. Explain the results.

# Define a function with a local variable

def example\_function():

    # Local variable within the function

    local\_variable = "I am a local variable"

    print(local\_variable)

# Call the function

Example\_function()

# Try to use the local variable outside the function (uncomment the line below to see the result)

print(local\_variable)

In the above code example, I have created a function with the name “example\_function” which has a local variable “local\_variable” and when I try to call the function it prints local\_variable.

When I try to use the local variable outside the function, I get a name error because I have not defined the variable where I am using it. Local variables can only be accessed inside the function where they have been defined.

**Example 4**: Construct a function that takes an argument. Give the function parameter a unique name. Show what happens when you try to use that parameter name outside the function. Explain the results.

# Define a function that takes an argument with a unique parameter name

def example\_function(parameter\_name):

    print("Parameter inside the function:", parameter\_name)

# Call the function with an argument

example\_function("I am an argument")

# Try to use the parameter name outside the function (uncomment the line below to see the result)

print(parameter\_name)

above is a code with a function with the name “example\_function” and takes a parameter named “parameter\_name”. when I call the function using “example\_function(argument) the value of the parameter is printed inside the function. But if I try to use the function using the “print(parameter\_name) I get an error as the output. The “parameter\_name is a local variable within the function’s scope which acts as a placeholder for the value passed when the function is called. That is why I got a name error when I tried to print “parameter\_name outside the function. Function parameters in python are local and their scope is limited to the function’s block.

**Example 5**: Show what happens when a variable defined outside a function has the same name as a local variable inside a function. Explain what happens to the value of each variable as the program runs.

#EXAMPLE 5

# Define a variable outside the function

global\_variable = "This is a global variable"

# Define a function that uses a local variable with the same name as the global variable

def example\_function():

    # Define a local variable with the same name as the global variable

    global\_variable = "This is a local variable"

    print("Inside the function - Local Variable:", global\_variable)

# Print the value of the global variable before calling the function

print("Before calling the function - Global Variable:", global\_variable)

# Call the function

example\_function()

# Print the value of the global variable after calling the function

print("After calling the function - Global Variable:", global\_variable)