**Certified Agentic & Robotic AI Engineer – Quarter 1, Batch 76, Class 2 (Full Step-by-Step Report)**

**Date:** Sunday, August 24, 2025  
**Time:** 2:00 PM – 6:00 PM (Pakistan Standard Time)  
**Venue:** Boys Scout Auditorium  
**Program Quarter:** 1, Batch 76  
**Instructors:** Mr. Aneeq & Mr. Hamza  
**Session Type:** Hands-on (Google Colab • Python Coding)  
**Document created by:** Taha Jalal

**1) Session Overview**

Today’s class focused on using **Google Colab** for Python programming. The instructor guided us through logging into Google Colab, explained the differences between Colab and VS Code, and made us practice Python fundamentals step by step.

**Key Difference between VS Code and Google Colab:**

* **VS Code** → can be used **offline**; to run a Python script, you must provide the **file name with extension** (e.g., python foundation.py).
* **Google Colab** → requires **internet** (online tool); code can be executed instantly in a cell using **CTRL + Enter** without specifying a file name.

**2) Python Coding on Google Colab**

Below are the exact exercises done in class, written as proper Python code.

**a) Printing Text**

# I am printing Hello World

# now I will write some more code

# This will tell what it is doing

print("hello world")

print("Welcome to Pakistan")

**Result:**

hello world

Welcome to Pakistan

**b) Using Variables Instead of Long Forms**

# I am printing Hello World

a = "hello world"

b = a + " - Welcome to Pakistan"

c = "\nIt has rained 7.5mm in Karachi" # \n is used for next line

print(b + c)

**Result:**

hello world - Welcome to Pakistan

It has rained 7.5mm in Karachi

**c) Variables**

# variables

name = "Taha"

number = "10"

print(name)

print(number)

**Result:**

Taha

10

**d) Data Types**

# data types

# 1- String

# 2- Integer

# 3- Boolean

# 4- Float

# 5- List

# 6- Dictionary

# 7- Set

# 8- Tuple

# 1- String -> str

print("Hi how are you?")

# 2- Integer -> int

print("5")

# 3- Float

print(10.5)

# 4- Boolean - True / False

print("Is it Raining?")

print(True)

print(False)

**Result:**

Hi how are you?

5

10.5

Is it Raining?

True

False

**e) Finding the Class of Data Types**

user\_name = "Taha"

name\_type = type(user\_name)

print(name\_type)

number = 20

print(type(number))

floating\_number = 2.4

print(type(floating\_number))

boolean\_number = 1

print(type(boolean\_number))

**Result:**

<class 'str'>

<class 'int'>

<class 'float'>

<class 'int'>

**f) Operators & Operands**

# 2 = Operand , (+, -, \*, /) = Operator

print(2 + 2)

print(1009 - 9)

# Types of Operators:

# 1- Arithmetic Operators

# 2- Comparison Operators

# 3- Assignment Operators

# 4- Logical Operators

**Result:**

4

1000

**g) Arithmetic Operators**

# Addition -> +

print(2 + 2)

# Subtraction -> -

print(1009 - 9)

# Multiplication -> \*

print(2 \* 2)

# Division -> /

print(1009 / 9)

# Modulus -> %

print(10 % 3)

# Floor Division -> //

print(10 // 3)

# Exponential -> \*\*

print(2 \*\* 3)

**Result:**

4

1000

4

112.11111111111111

1

3

8

**h) Comparison Operators**

# Comparison Operators

# equal to -> ==

# greater than -> >

# less than -> <

# not equal to -> !=

num1 = 10

num2 = 5

print(num1 == num2)

print(num1 > num2)

print(num1 < num2)

print(num1 != num2)

print(num1 > num2)

print(num1 < num2)

print(num1 >= num2)

print(num1 <= num2)

print(num1 != num2)

**Result:**

False

True

False

True

True

False

True

False

True

**i) Assignment Operators**

# Assignment Operators

# equal to -> =

name = "Taha Jalal"

num1 = 10

num2 = 10 + 5 # 15

num1 = 20

num2 = num1 + 5

print(num2)

num3 = num1 - 5

print(num3)

num4 = num1 \* 5

print(num4)

num5 = num1 / 5

print(num5)

**Result:**

25

15

100

4.0

**j) Logical Operators**

# Logical Operators

# logical AND -> and

# logical OR -> or

# logical NOT -> not

num1 = 10

num2 = 20

# condition: num1 should not equal num2 AND num1 < num2

result = num1 != num2 and num1 < num2

print(result)

# condition: num1 should not equal num2 AND num1 > num2

result2 = num1 != num2 and num1 > num2

print(result2)

# condition: num1 should not equal num2 OR num1 < num2

result3 = num1 != num2 or num1 > num2

print(result3)

# condition: num1 should not equal num2 OR num1 > num2

result4 = num1 != num2 or num1 > num2

print(result4)

**Result:**

True

False

True

True

**k) Printing with Variables**

num1 = 10

num2 = 20

print(num1, num2)

print("num1 is", num1)

print("num1 added by num2", "=", num1 + num2)

**Result:**

10 20

num1 is 10

num1 added by num2 = 30

**3) Notes & Instructions**

* All exercises were performed on **Google Colab** using cells executed with **CTRL + Enter**.
* Differences between VS Code and Google Colab were explained in detail.
* For **n8n** practice, the instructor advised watching the **online recorded sessions**.

✅ End of Class 2 Report