Module 01: Critical Thinking Assignment: Creating Python Programs

Saravenus Khon

Colorado State University Global

CSC500-1: Principles of Programming

Dr. Isaac K. Gang

March 26, 2025

Module 01: Critical Thinking Assignment: Creating Python Programs

Part 1:
Write a Python program to find the addition and subtraction of two numbers. Ask a user to input two numbers (num1 and num2). Given those two values, add them together, and display the total Subtract the two values to find the output, and display it.

START

```
// Set the variables
SET num1 to  0
SET num2 to 0
SET sum to  0
SET difference to 0

// Ask the user for two numbers
DISPLAY "Enter your first number: "
GET num1 from the user

DISPLAY "Enter your second number: "
GET num2 from the user

// Perform the addition steps here
SET sum = num1 + num2
DISPLAY "The sum of the two numbers is: ", sum

// Perform the subtraction steps here
SET difference = num1 – num2
DISPLAY "The difference between the two numbers is: ", difference
```

END

Part 2:

Write a Python program to find the multiplication and division of two numbers.
Ask the user to input two numbers (num1 and num2). Given those two numbers, multiply them together to find the output. Also, divide num1/num2 to find the output.

Start

// Set variables
SET num1 to 0
SET num2 to 0
SET product to 0
SET quotient to 0

// Ask the user for two numbers
DISPLAY "Enter your first number: "
GET num1 from the user

DISPLAY "Enter your second number: "
GET num2 from the user

//Perform the Multiplication steps
SET product to num1 * num2
DISPLAY num1 " * " num2 " = ", product

//Perform the Division steps, use conditions for this

IF num2 is not equal to 0, **THEN**

    SET quotient to num1/num2
    DISPLAY "the quotient of the two numbers is: ", quotient

ELSE

Display "Error: dividing by zero is not allowed.... nope "

ENDIF

END

Part III:
I put the code together in a while loop to make it simplified, effective, and efficient.

Source Code

```
"""
Student Name: Saravenus Khon -Date: 03/29/2025 -- Assignment: Creating Python Programs
"""

while True:

    print("\n Please select Option 1 or 2:")
    print("Option 1: Add and Subtract a pair of numbers")
    print("Option 2: Multiply and Divide a pair of numbers")

    choice = input("Please Select 1 or 2: ").strip()

    # Validate input to accept only "1" or "2"
    if choice not in ["1", "2"]:
        print("Invalid choice, please enter 1 or 2.")
        continue  # Restart the loop if the user input is not 1 or 2

    # Prompt the user for two numbers:
    num1 = float(input("Enter your first number: "))
    num2 = float(input("Enter your second number: "))

    # Perform Addition and Subtraction here
    if choice == "1":
        sum = num1 + num2
        difference = num1 - num2
        print("\n Option 1 (Part 1) : Addition and Subtraction for the noobs.. J/K!")
        print(f"{num1} + {num2} = {sum}")
        print(f"{num1} - {num2} = {difference}")

    # Perform Multiplication and Division here
    else:
        product = num1 * num2
        quotient = num1 / num2 if num2 != 0 else "Undefined (division by zero not allowed!! )"

        print("\n Option 2 (Part 2 ): Multiplication and Division! the fun stuff")
        print(f"{num1} × {num2} = {product}")
        print(f"{num1} ÷ {num2} = {quotient}")

    # Ask if the user wants to keep playing
    retry = input("\n Want to try another set of numbers? [Yes or No]: ").strip().lower()
    if retry != "yes":
        print("Thanks for playing!")
        break  # Exit the loop
```

Screen shots

```
C:\Users\sarak\AppData\Local\Programs\Python\Python313\python.exe C

 Please select Option 1 or 2:
Option 1: Add and Subtract a pair of numbers
Option 2: Multiply and Divide a pair of numbers
Please Select 1 or 2: 1
Enter your first number: 150
Enter your second number: 26

 Option 1 (Part 1) : Addition and Subtraction for the noobs.. J/K!
150.0 + 26.0 = 176.0
150.0 - 26.0 = 124.0

 Want to try another set of numbers? [Yes or No]: yes
 Please select Option 1 or 2:
Option 1: Add and Subtract a pair of numbers
Option 2: Multiply and Divide a pair of numbers
Please Select 1 or 2: 2
Enter your first number: 150
Enter your second number: 12

 Option 2 (Part 2 ): Multiplication and Division! the fun stuff
150.0 × 12.0 = 1800.0
150.0 ÷ 12.0 = 12.5

 Want to try another set of numbers? [Yes or No]: No
Thanks for playing!

Process finished with exit code 0
```