

Final Project – Python – Feb 2024

By following these instructions, you'll create a program that effectively handles user input validation, displays information based on input numbers, performs arithmetic operations, and handles potential errors gracefully.

1. Create a Function to Get Numbers:

- Create a function called `getNumbers()` that prompts the user to input two numbers. (4 pts)
- Store these numbers in a list variable named `[num1, num2]`. (2 pts)

2. Validation Function:

- Develop a function called `validateNumbers()`. (2 pts)
- Utilize a while loop and try-except blocks to ensure the user inputs valid numbers. (8 pts)
- Call the `getNumbers()` function inside the try block to obtain the numbers. (2 pts)

3. Display Function for Number Information:

- Define a function called `displayNumbers(num1, num2)` that accepts two valid numbers. (2 pts)

Implement the following conditions to display information based on the input numbers:

➤ First if, elif, else: (10 pts)

If both numbers are greater than 0, print "2 positive numbers".

If both numbers are less than 0, print "2 negative numbers".

If `num1` is positive and `num2` is negative, print "num1 is positive, num2 is negative".

If `num1` is negative and `num2` is positive, print "num1 is negative, num2 is positive".

If none of the above conditions are met (else), create a sentence based on the else condition and display it, considering the three statuses of numbers: positive, negative, and zero.

Second if, elif, else: (6 pts)

➤ Additionally, consider the case where:

If only one of the numbers (num1 or num2) is positive, print "JUST One number is positive".

If only one of the numbers (num1 or num2) is negative, print "JUST One number is negative".

For any other cases (else), create a sentence based on the else condition and display it, considering the three statuses of numbers: positive, negative, and zero.

- Calculate and display the results of the following arithmetic operations:

Addition: $\text{num1} + \text{num2}$ (1 pts)

Subtraction: $\text{num1} - \text{num2}$ (1 pts)

Multiplication: $\text{num1} * \text{num2}$ (1 pts)

Division: $\text{num1} / \text{num2}$ (use try-except blocks for division by zero) (3 pts)

Ensure each result is saved in a variable.

4. Comments:

- Include at least six comments within your code to explain its functionality. (3 pts)

5. Function Calls:

- Properly call the functions in your code to execute the defined functionalities. (3 pts)

6. Total functionality (2 pts)