

Assignment 3

Assignment: Do-While Loop and String Manipulation

This assignment includes two problems that will help you practice the `do-while` loop and basic string operations in Java.

Problem 1: Do-While Loop - Sum of Positive Numbers

Write a Java program that repeatedly asks the user to enter a positive number. The program should keep adding the entered numbers and display the running total each time a new number is entered.

- Use a `do-while` loop to continue prompting the user until they enter a negative number.
- Once a negative number is entered, exit the loop and display the final sum of all positive numbers entered by the user.

Example Input/Output:

```
Enter a positive number (negative number to stop): 5
Running total: 5
```

```
Enter a positive number (negative number to stop): 10
Running total: 15
```

```
Enter a positive number (negative number to stop): 3
Running total: 18
```

```
Enter a positive number (negative number to stop): -2
Final Sum: 18
```

Problem 2: String Manipulation - Count Vowels and Consonants

Write a Java program that prompts the user to enter a sentence. The program should count the number of vowels and consonants in the sentence and display

the counts.

- Use methods from the `String` class to identify each character in the sentence.
- Count all vowels (`a, e, i, o, u`, both uppercase and lowercase) and consonants. Ignore any non-alphabetical characters (such as spaces, punctuation).

Example Input/Output:

```
Enter a sentence: Java programming is fun!  
Number of vowels: 7  
Number of consonants: 13
```

Hints for Students:

- Use `charAt()` and `Character.isLetter()` methods to check each character in the string.
- Use a `for` loop to iterate over each character in the string.
- `toLowerCase()` can be helpful to make the program case-insensitive.

These problems should give you practice with `do-while` loops for repeated input and basic string manipulation techniques in Java. Good luck!