

Title

Analyze the user input string.

Background

N/A

Program Specifications

Write a program to analyze the input string and display the following information:

- Display the number of characters in the string.
- Display the all characters, uppercase characters, lowercase characters.
- Display the list of number, list of even numbers, list of odd numbers, and list of square numbers.
- Display the special characters

Function details:

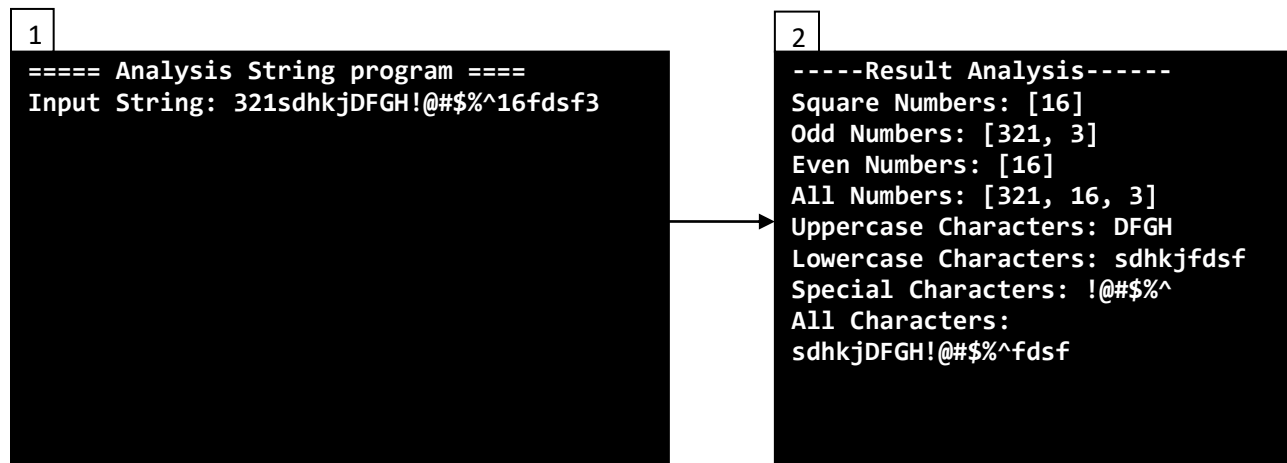
Function 1: Display Gui And Input Data.

- User runs program. The program prompts user to input data.
- Auto next **Function2**.

Function 2: Perform function

- Analyze and display result
 - Display the number of characters in the string.
 - Display the all characters, uppercase characters, lowercase characters.
 - Display list of numbers, list of even numbers, list of odd number, and list of square numbers
 - Display the special characters
- Exit the program.

Expectation of User interface:



Guidelines

Student must implement methods

- `getNumber`
- `getCharacter`

in startup code.

Hint:

- Create AnalysisStringclass which includes the two methods as described in Functional Requirements section.
 - Method getNumber to retrieve the following results
 - List all numbers (using Regular Expressions)
 - List even numbers (number% 2 == 0)
 - List odd numbers (number% 2!= 0)
 - List square numbers (using Math.sqrt)
 - Method getCharacter to retrieve the following results
 - String of all characters
 - String of special characters (using Regular Expressions)
 - String of uppercase characters (usingCharacter.isUpperCase())
 - String of lowercase characters (opposite)

Function 1: Analyze the number types

- Method name: public HashMap<String, List<Interger>>getNumber(String input)
 - Input:
 - input: the input string.
 - Return: analysis result.

Function 2: Analyze the character types and special characters

- Method name: public HashMap<String, StringBuilder>getCharacter(String input)
 - Input:
 - input: the input string.
 - Return: analysis result.