TextAnalyzer Class Manual

Objective:
The objective of this manual is to guide you in creating a TextAnalyzer class in Java, which will analyze a text file. The class will provide methods to perform various analyses such as calculating the number of letters, frequency of each letter, number of words, longest and shortest word, number of vowels and consonants.

Instructions:

1. Create a new Java class named TextAnalyzer.

2. **Declare the following instance variables:**
   - filename (String): The name of the file to be analyzed.
   - text (String): The text content of the file.
   - words (String[]): An array to store the words in the text.
   - longestWord (String): The longest word in the text.
   - shortestWord (String): The shortest word in the text.
   - frequencyOfUnigrams (HashMap<String, Integer>): The frequency of each word in the text.
   - frequencyOfBigrams (HashMap<String, Integer>): The frequency of each bigram in the text.
   - frequencyOfTrigrams (HashMap<String, Integer>): The frequency of each trigram in the text.

3. Implement the constructor:
   - Create a constructor that initializes the filename variable by getting the name of the file from the user.
   - Use a Scanner to read the file and store its content in the text variable in lowercase.

4. Implement the following methods:
   - getFileName(): Method to get the name of the file from the user.
   - setWords(): Method to split the text into words and store them in the words array.
   - calcNumberOfLetters(String text): Method to calculate the number of letters in the text.
   - frequencyOfLetters(String text): Method to calculate the frequency of each letter in the text.
   - numberOfWords(): Method to calculate the number of words in the text.
   - LongestWord(): Method to find the longest word in the text.
   - ShortestWord(): Method to find the shortest word in the text.
   - frequencyOfWords(): Method to calculate the frequency of each word in the text.
   - frequencyOfBigrams(): Method to calculate the frequency of each bigram in the text.
   - numberOfVowels(): Method to calculate the number of vowels in the text.
   - numberOfConsonants(): Method to calculate the number of consonants in the text.

5. **Implement the necessary getter and setter methods for instance variables.

6. Test your TextAnalyzer class by creating an object of the class and calling its methods to perform text analysis.

Additional Notes:
- Make sure to handle file not found exceptions and other possible errors appropriately.
- Use regular expressions for text processing tasks like removing non-alphabetic characters.
- Ensure proper commenting and documentation for better code readability and understanding.
