**Technical Design Document**

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**Program Description:**

The program receives a suspicious message from the user (likely copied from an email or text message), analyzes it, and determines the likelihood that it is spam based on the suspicious words or phrases it identifies in the message. Also displays the words and phrases that resulted in the displayed results.

**Functions used in the Program:**

1. **Function Name:** main

**Description:** Calls the class methods in the correct order to execute the program.

**Parameters:** None.

**Variables:** None.

**Logical Steps:** 1. Initializes an instance of the SpamFilter class.

2. Calls the get\_message method.

3. Calls the scan\_message method.

4. Calls the spam\_likelihood method.

5. Calls the display\_results method.

**Returns:** None.

2. **Function Name:** get\_message

**Description:** Prompts the user to enter the contents of a suspicious

        message for analysis. Stores the message in the self.message

        attribute.

**Parameters:** self

**Variables:** self.message

**Logical Steps:** 1. Prompts the user to enter a message for analysis.

2. Converts all the letters in the message to lowercase.

3. Assigns the updated message as the value of self.message.

**Returns:** None.

3. **Function Name:** scan\_message

**Description:** Takes each word or phrase from the spam\_words list and checks

        to see if it's in self.message. If so, it increments

        self.spam\_score by 1 and adds the identified word to the

        self.found\_spam\_words dictionary, or if already present,

        increments it's entry by 1.

**Parameters:** self

**Variables:** phrase, self.spam\_words, self.spam\_score, self.found\_spam\_words

**Logical Steps:** 1. Loop through each word or phrase in self.spam\_words.

2. Check if phrase is in self.message.

3. If it is, add 1 to self.spam\_score and add 1 occurrence of phrase to self.found\_spam\_words.

**Returns:** None.

4. **Function Name:** spam\_likelihood

**Description:** Checks self.spam\_score and determines from that the

        likelihood that self.message is a spam message.

**Parameters:** self

**Variables:** self.spam\_score, self.likelihood

**Logical Steps:** 1. Compares self.spam\_score to each range.

2. Assigns the determined likelihood to self.likelihood.

**Returns:** None.

5. **Function Name:** display\_results

**Description:** Checks self.spam\_score and determines from that the

        likelihood that self.message is a spam message.

**Parameters:** self

**Variables:** self.spam\_score, self.likelihood, phrase, occurrences, self.found\_spam\_words

**Logical Steps:** 1. Prints a message to indicate the results are coming next.

2. Prints the spam\_score.

3. Prints the spam\_likelihood.

4. Loops through the key, value pairs of self.found\_spam\_words.

5. Prints each identified spam word with its number of occurrences.

**Returns:** None.

**Logical Steps:**

1. main.
2. get\_message
3. scan\_message
4. spam\_likelihood
5. display\_results

**Link to your repository:** <https://github.com/ChauncyJKent/COP2373>

**Output Screenshot: (make sure big enough so I can see)**

A black screen with a black background

AI-generated content may be incorrect.