**Technical Design Document Exercise 2**

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**Program Description:** This program scans a user-entered email message for 30 common spam words or phrases. Each match adds one point to the spam score. At the end, the program displays the total score, a likelihood rating, and a list of which spam words/phrases were found.

**Functions used in the Program (list in order as they are called):**

### **1. Function Name:** build\_keywords

**Description:** Creates and returns a list of 30 common spam words and phrases

**Parameters:** None

**Variables:**

1. keywords - a list of 30 strings that represent common spam words and phrases.

**Logical Steps:**

1. Define a list of 30 spam words/phrases like “free”, “winner”, or “limited time”.

**Returns:** A list of 30 spam keywords/phrases

### **2. Function Name:** analyze\_message

**Description:** Scans a given email message for spam words/phrases, then calculates the spam score, then generates a likelihood rating, and gives a report of matched words.

**Parameters:**

* message (string): The user entered email message.
* keywords (list of strings): the list of spam words/phrases.

**Variables:**

1. text - the lowercase version of the email message.
2. score - total spam score.
3. found\_words - the list of words that matched.
4. found\_counts - the list of how many times each matched word appeared.
5. likelihood - rating of how likely the message is spam.
6. hits\_report - formatted string listing the matches.

**Logical Steps:**

1. Convert the email message to lowercase.
2. Initialize the spam score at 0.
3. Loop through each keyword.
4. Count its recurrences in the text.
5. If found, add to the score and track the word and count.

4. Determine likelihood rating based on score ranges. 0 = very unlikely, 1-2 = unlikely, 3-6 = possible, 7-14 = likely, 15+ = very likely.

5. Build a printable hits report of all matched words and counts.

6. Return the score, likelihood, and hits report.

**Returns:**

* Spam score as an integer.
* Likelihood rating.
* Hits report.

**Constants:**

* Spam Keywords List - the 30 predefined spam words/phrases in build\_keywords().
* Score Thresholds - fixed values in analyze\_message() used to determine the likelihood:
  1. 0 - Very Unlikely Spam
  2. 1-2 - Unlikely Spam
  3. 3-6 - Possible Spam
  4. 7-14 - Likely Spam
  5. 15+ - Very Likely Spam

**Link to your repository:**

[loganflynnn (Logan Flynn)](https://github.com/loganflynnn)

**Output Screenshot:**

