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Program Description:

The purpose of this program is to check a message for common spam keywords

And assign it a probability of being spam based on how many keywords it detects.

Functions used in the program:

1. Function Name:

scan\_message

* Description: This function checks messages for spam by looking for specific words, counting how often they appear to calculate a score, and then showing which words were found.
* Parameters:

1. message (str): The user-provided email message to be analyzed.
2. spam\_keywords (list): A list of spam words and phrases to search the message for.

* Variables:

1. score (int): A set used to store the unique keywords found in the message to avoid duplicates in the final report
2. found\_keywords (set): A set used to store the unique keywords found in the message to avoid duplicates in the final report.
3. normalized\_message (str): A lowercase version of the input message to ensure case intensive matching.
4. occurrences (int): The number of times a specific keyword appears in the message.

* Logical steps:

1. Initialize the score to 0 and found\_keywords to an empty set
2. Convert the input message to lowercase and store it in normalized\_message
3. For each keyword, count its total occurrences within normalized\_messages
4. If a keyword occurs one or more times, add the number of occurrences to the score and add the keyword to the found\_keywords set

* Returns: A tuple containing the final int score and a sorted list of the unique found\_keywords

2. Function Name:

rate\_likelyhood

* Description: This function takes a numerical score and returns a human readable string that rates the likelihood of the message being spam.
* Parameters: score (int): The spam score calculated by the scan\_message function.
* Variables: This function uses no internal variables.
* Logical Steps:

1. Use an if/elif/else structure to pick a likelihood of scam
2. Return a specific rating string based on which range the score falls into

* Returns: A string describing the likelihood of message being spam

3. Function name:

main

* Description: This is the primary function that runs the application. It handles user I/O and calls other functions in the correct order to produce the final analysis.
* Parameters: N/A
* Variables:

1. lines (list): A list to hold each line of the user's multi-line input.
2. user\_message (str): The complete message after joining all input lines.
3. spam\_score (int): The score returned from the scan\_message function.
4. detected \_words (list): The list of trigger words returned from the scan\_message function.
5. likelihood (str): The rating string returned from the rate\_likelihood function.

* Logical steps:

1. Print a welcome message and instructions.
2. Create a loop for multi-line inputs from the user, storing each line into the Lines list. The loop breaks when an empty line is submitted.
3. Join the lines into the single user\_message string.
4. Call scan\_message with the user\_message and SPAM\_KEYWORDS list to get the spam\_score and detected\_words.
5. Call rate\_likelihood with the spam\_score to get the likelihood.
6. Print the final analysis report, including the score, likelihood, and trigger words.

* Returns: N/A

Logical Steps

1. The main function is called when the script is executed.
2. Within main, the scan\_message function is called to analyze the user’s input.
3. The rate\_likelihood function is called to convert the score from scan\_messaging into a raing
4. main prints the results from the previous two function calls.

Link to your repository: <https://github.com/RoarinThundah/COP2373_Jaeger>

Output Screenshot:







