**Communication Analysis Tool: User Manual**

Welcome to the Communication Analysis Tool! This simple program helps you understand your messages better. It can tell you if a message looks like spam, what its general feeling is (happy, sad, or neutral), how formal or informal it sounds, and even give you insights into how people communicate in a conversation.

This manual will guide you through how to use the tool, step by step. You don't need to know anything about computer programming to use this!

**1. Getting Started**

First, you need to open your computer's "Command Prompt" (on Windows) or "Terminal" (on Mac/Linux).

1. **Find your project folder:** Navigate to the folder where you saved all the program files. For example, if your folder is on your Desktop named "Group 16", you might type:
2. cd C:\Users\YourName\Desktop\Group 16 #On Windows
3. # or
4. cd ~/Desktop/Group\ 16/ #On Mac/Linux
5. **Start the program:** Once you are in the correct folder, type this command and press Enter:
6. python main.py

You will then see the main menu:

Communication Analysis CLI

1. Run full analysis on sample dataset

2. Analyze a custom text file

3. Type and analyze a custom message

4. Exit

**2. How to Use Each Option**

**Option 1: Run full analysis on sample dataset**

This option is great if you have a collection of message files (like emails or WhatsApp chats) that you want to analyze all at once. The program will look at every .txt file in the data/sample\_emails/ folder.

* **What to do:**
  1. Type 1 and press Enter.
* **What happens:**
  1. The program will go through all your sample files.
  2. It will create a detailed report file in the data/reports/ folder. This file will have a name like report\_YYYY-MM-DD\_HH-MM-SS.txt.
  3. After the report is saved, a quick summary of the main findings will appear right in your command prompt/terminal window.

**Option 2: Analyze a custom text file**

Use this option if you want to analyze just one specific message file.

* **What to do:**
  1. Type 2 and press Enter.
  2. The program will show you a list of files already in your data/sample\_emails/ folder, each with a number next to it.
  3. **To pick a file from the list:** Type the number next to the file you want to analyze and press Enter.
  4. **To analyze a file not on the list (from anywhere on your computer):** Type 0 and press Enter. Then, the program will ask you to type the full path to your file (e.g., C:\MyDocuments\my\_special\_email.txt). Type the path and press Enter.
* **What happens:**
  1. The program will analyze that single file.
  2. It will create a detailed report file in the data/reports/ folder.
  3. A quick summary will also be printed in your command prompt/terminal.

**Option 3: Type and analyze a custom message**

This option is perfect for quickly analyzing a message you type directly into the program, without needing to save it as a file first.

* **What to do:**
  1. Type 3 and press Enter.
  2. **Select Message Type:** You'll see a small menu asking what kind of message you're typing:
  3. Select Message Type:
  4. 1. WhatsApp Chat Message
  5. 2. Email Message (with optional headers)
  6. 3. SMS Message
  7. 4. Other / Generic Text
  8. 5. Back to Main Menu
     + Choose the number that best describes your message (e.g., 1 for a WhatsApp-style message, 2 for an email).
     + If you're unsure, 4. Other / Generic Text is always a safe choice.
     + If you want to go back to the *main menu*, type 5.
  9. **Enter Sender Name (Optional):** The program will ask for a sender name (e.g., John Doe). You can type a name and press Enter, or just press Enter to leave it blank.
     + **To go back to the Message Type Selection:** Type back and press Enter.
  10. **Enter Conversation ID (Optional):** It will then ask for a Conversation ID (e.g., Project\_Meeting\_Chat). This helps group messages that belong to the same discussion. You can type one or leave it blank.
      + **To go back to the Message Type Selection:** Type back and press Enter.
  11. **Type Your Message:**
      + Start typing or paste your message.
      + **To finish:** Press [Enter] on an empty line (just press Enter twice in a row).
      + **To cancel this message and go back to Message Type Selection:** Type cancel on a new line and press [Enter].
  12. **Analyze Another?** After your message is analyzed, the program will ask if you want to "Analyze another custom message? (y/n)".
      + Type y and press Enter to analyze another message of any type.
      + Type n and press Enter to go back to the main menu.
* **What happens:**
  1. The program analyzes your typed message.
  2. A report for this message will be saved to data/reports/.
  3. A summary will be printed in your command prompt/terminal.

**Option 4: Exit**

This option simply closes the program.

* **What to do:**
  1. Type 4 and press Enter.
* **What happens:**
  1. The program will close.

**3. Understanding the Reports**

After analysis, reports are saved as text files in the data/reports/ folder. You can open these with any text editor (like Notepad, VS Code, etc.) or a word processor.

Each report provides:

* **Individual Message Analysis:** For each message, you'll see:
  + **Source:** Where the message came from (e.g., my\_email.txt, personal\_whatsapp.txt, manual\_input\_email).
  + **Subject:** The email subject, or a default like "WhatsApp Chat Message" or "Custom Message".
  + **Sender:** Who sent the message.
  + **Conversation ID:** A label to group related messages.
  + **Timestamp:** When the message was sent.
  + **Message Body Preview:** A short peek at the message content.
  + **Spam:** Whether it's SPAM or HAM (not spam).
  + **Sentiment:** The overall feeling: positive, neutral, or negative.
  + **Style:** A score (higher is often more formal/structured) and its Formality (e.g., formal, informal).
* **Summary Metrics:** Overall numbers for all messages analyzed in that report:
  + Total number of messages.
  + How many were spam vs. ham.
  + The breakdown of positive, neutral, and negative sentiments.
  + The average style score.
  + How many messages were formal vs. informal.
* **Behavioral Insights:** This section looks at communication patterns:
  + **Top Senders:** Who sent the most messages.
  + **Average Response Delay:** If there are multiple messages in the same conversation, this shows the average time it took for someone to reply.
  + **Suggestions:** Tips for improving communication based on the analysis (e.g., "Respond to messages more promptly").

This tool is designed to give you valuable insights into your communication data!