# **Functional Test Cases**

1. **Test Case 1 - Text Selection and Analysis**
   * **Description:** Verify that the extension correctly selects the user-highlighted text from a webpage and sends it for analysis.
   * **Steps:**
     1. Open a webpage.
     2. Highlight a portion of text.
     3. Activate the extension.
   * **Expected Result:** The extension captures the selected text and sends it to the models for analysis.
2. **Test Case 2 - Model Selection**
   * **Description:** Verify that the extension correctly uses the selected model (OpenAI, Llama, or Cohere) for analysis.
   * **Steps:**
     1. Select a model from the extension’s options.
     2. Highlight a portion of text on a webpage.
     3. Activate the extension.
   * **Expected Result:** The extension uses the selected model for text analysis.
3. **Test Case 3 - Explanation Generation**
   * **Description:** Verify that the extension correctly generates an explanation of the selected text when requested.
   * **Steps:**
     1. Highlight a portion of text on a webpage.
     2. Select “Explain” from the extension’s options.
     3. Activate the extension.
   * **Expected Result:** The extension provides an explanation of the selected text.
4. **Test Case 4 - Summary Generation**
   * **Description:** Verify that the extension correctly generates a summary of the selected text when requested.
   * **Steps:**
     1. Highlight a portion of text on a webpage.
     2. Select “Summarize” from the extension’s options.
     3. Activate the extension.
   * **Expected Result:** The extension provides a summary of the selected text.
5. **Test Case 5 - Paraphrase Generation**
   * **Description:** Verify that the extension correctly generates a paraphrase of the selected text when requested.
   * **Steps:**
     1. Highlight a portion of text on a webpage.
     2. Select “Paraphrase” from the extension’s options.
     3. Activate the extension.
   * **Expected Result:** The extension provides a paraphrase of the selected text.
6. **Test Case 6 - VSM Algorithm Application**
   * **Description:** Verify that the extension correctly applies the VSM algorithm to the analysis results.
   * **Steps:**
     1. Highlight a portion of text on a webpage.
     2. Activate the extension.
   * **Expected Result:** The extension applies the VSM algorithm to the analysis results and displays the output.
7. ***Test Case 7 - Multi-Language Support (TBD –*** *maybe an error check to just prompt only ENGLISH )*
   * **Description:** Verify that the extension correctly analyzes text in different languages.
   * **Steps:**
     1. Open a webpage in a non-English language.
     2. Highlight a portion of text.
     3. Activate the extension.
   * **Expected Result:** The extension correctly analyzes the text and provides the requested output. ( or generates an error to show that the website is non-English)
8. **Test Case 8 - Error Handling**
   * **Description:** Verify that the extension correctly handles errors, such as when no text is selected *(or an image is selected -TBD feature).*
   * **Steps:**
     1. Do not select any text on a webpage.
     2. Activate the extension.
   * **Expected Result:** The extension displays an appropriate error message.
9. **Test Case 9 - Large Text Selection**
   * **Description:** Verify that the extension can handle large amounts of selected text (or display a message if selection exceeds set limit)
   * **Steps:**
     1. Highlight a large portion of text on a webpage.
     2. Activate the extension.
   * **Expected Result:** The extension correctly analyzes the text and provides the requested output.
10. **Test Case 10 - Extension Deactivation**
    * **Description:** Verify that the extension can be deactivated and reactivated correctly.
    * **Steps:**
      1. Activate the extension.
      2. Deactivate the extension.
      3. Reactivate the extension.
    * **Expected Result:** The extension correctly deactivates and reactivates.
11. **Test Case 11 - VSM Accuracy**
    * **Description:** Verify that the VSM algorithm accurately represents the semantic relationships between words in the selected text.
    * **Steps:**
      1. Select a portion of text with clear semantic relationships (e.g., synonyms, antonyms).
      2. Activate the extension and request an analysis(action).
    * **Expected Result:** The VSM algorithm correctly identifies and represents the semantic relationships in its analysis.
12. **Test Case 12 - VSM Scalability**
    * **Description:** Verify that the VSM algorithm can handle large amounts of text ( or the limit set for the extension)
    * **Steps:**
      1. Select a large portion of text.
      2. Activate the extension and request an analysis.
    * **Expected Result:** The VSM algorithm successfully analyzes the text without performance issues.
13. **Test Case 13 - VSM with Different Languages**
    * **Description:** Verify that the VSM algorithm correctly analyzes text and can identify non-English text (*TBD feature* )
    * **Steps:**
      1. Select a portion of text in a non-English language.
      2. Activate the extension and request an analysis.
    * **Expected Result:** The VSM algorithm correctly analyzes the text and represents the semantic relationships or outputs desired message.
14. **Test Case 14 - Model Accuracy**
    * **Description:** Verify that each model accurately analyzes the selected text.
    * **Steps:**
      1. Select a portion of text.
      2. Activate the extension, select a model (OpenAI, Llama, or Cohere), and request an analysis.
    * **Expected Result:** The selected model accurately analyzes the text and provides the requested output (explanation, summary, or paraphrase).
15. **Test Case 15 - Model Comparison**
    * **Description:** Verify that each model provides consistent results when analyzing the same text.
    * **Steps:**
      1. Select a portion of text.
      2. Activate the extension, select a model, and request an analysis.
      3. Repeat step 2 for each model.
    * **Expected Result:** All models provide consistent results when analyzing the same text.
16. **Test Case 16 - Model Performance**
    * **Description:** Verify that each model can handle large amounts of text without performance issues (or at least handles the set limit of text for the extension)
    * **Steps:**
      1. Select a large portion of text.
      2. Activate the extension, select a model, and request an analysis.
    * **Expected Result:** The selected model successfully analyzes the text without performance issues.