

# Design Document

Computer Science 4500 – Introduction to the Software Profession

Small Group 2 (SG3)

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## Revision History:

- **11/20/2025** – Began SG3 design and pseudocode layout; identified GUI options and structure. (I use the SG2 design)
- **11/22/2025** – Outlined file handling, concordance logic, and extra list framework for GUI integration.
- **11/25/2025** – Added search and error-handling features; tested pseudocode logic consistency.
- **11/28/2025** – Revised and commented pseudocode for readability, GUI event flow.
- **12/01/2025** – Completed

**Pseudocode:**

```

BEGIN PROGRAM

    DISPLAY splash window describing SG3 Concordance GUI functions.
    // Initialize main window and interface options for user navigation

    INITIALIZE main menu with options:
        (1) Open Text File
        (2) Find Word in All Files
        (3) Build Concordance
        (4) Close File
        (5) Quit Program
    // GUI buttons or dropdown selection menu replaces console prompts

    INITIALIZE empty list OPEN_FILES to hold file contents.
    // Stores all loaded and validated text data from user

    WHILE program is running
        WAIT for user menu selection.
    // Loops until user selects Quit option

        IF option = 1 THEN
            PROMPT user to choose .txt file via dialog.
            VALIDATE file extension and check duplicates.
            IF valid THEN
                READ file line by line.
                CLEAN text (remove punctuation, fix hyphens, trim blanks, etc).
                ADD file to OPEN_FILES and DISPLAY "File Loaded."
            ELSE DISPLAY "Invalid file."
            END IF
        // Handles file input and validation through GUI interaction

        ELSE IF option = 2 THEN
            IF OPEN_FILES empty THEN DISPLAY "No files loaded."
            ELSE
                PROMPT for search word; CONVERT to lowercase.
                FOR each file and line
                    IF word in line THEN RECORD file, line#, and snippet.
                END FOR
                DISPLAY matches in output box.
            END IF
        //search across all loaded files and outputs results to GUI textbox

        ELSE IF option = 3 THEN
            IF OPEN_FILES empty THEN DISPLAY "No files to process."
            ELSE PROMPT to select file.
                FOR each line (numbered)
                    SPLIT into words; FOR each word
                        CONVERT to lowercase; ADD (line#, word#) to CONCORDANCE[word].
                END FOR

```

```
END FOR
SORT words alphabetically and WRITE to "CONCORDANCE.TXT".
DISPLAY summary message.
END IF
// builds concordance for selected file and saves formatted output

ELSE IF option = 4 THEN
IF OPEN_FILES not empty THEN
    PROMPT to choose file; REMOVE from list; DISPLAY "File Closed."
ELSE DISPLAY "No files to close."
END IF
// Manages open file removal through selection dialog

ELSE IF option = 5 THEN
DISPLAY "Exiting Program." CLOSE all files and TERMINATE loop.
// Safely exits GUI and ends program

END WHILE

END PROGRAM
```





