- **Time Complexity ➖**

  The Program reads the input file line by line to count lines, so the time complexity of this step is O(n), where n is the number of lines.

  - Reading the file of array:
    After the number of lines the program reads, the program reads data from the file into an array of FileData structs. Thus it also has a time linear time complexity relative to the number of lines in the file,which is O(n).

  - Processing Files:-
    processFile() another loop is used to check for newer versions of files by comparing each file with every other file. This result in nested loop with quadratic equation time complexity, denoted as O(n^2).
    The function sFileOlderThanNMonths() is called to determine if the file is older than the N months. Which is typically constant or logarithmic time,
    So overall time complexity for processing files becomes O(n^2).

- **Space complexity:-**

    - Array to store file Data:-
      The program uses an array of FileData struct to store file data read from the input file, so its time complexity is O(n).

    - String Storage:-
      String variables are used to store file names,temporary values and data during file processing. However, since they are temporary and reused, their total space complexity is not significant compared to the array storing file data.

    - Remaining Variables:-
      Other variables such as N,M,count, and temporary variables used in processing have constant space complexity relative to the input size.

- Therefore, overall time complexity and space complexity lead to the ***O(n^2)*** and ***O(n)*** respectively, where n is the number of lines.