

SE110: Introduction to Software Engineering

Assignment 5

Due Date: 11.59 pm, June 04, 2021 **Section:** _____ **Roll Number:** _____

For the word search programs of assignment 3, now consider the additional requirements and give a single program.

Now a user of the word search game has to interact with the program. The user shall have a console based interface. Through this interface, the user shall be able to either create a search grid or invoke the search from an existing grid.

When the program starts, on home screen it provides three options to the user on console:

- 1) Create Grid
- 2) Search Words from Grid
- 3) Quit

The user can press C to create a grid, press S to search words from an existing grid, and press Q to quit.

If the user presses C on home screen, the user is asked to provide the following information one by one:

- 1) Name of the input file where a list of words is available in the format already used in Q1 Assignment 3 (one word per line)
- 2) Number of words in the file
- 3) Number of rows in the grid
- 4) Number of columns in the grid
- 5) Name of the output file where the grid needs to be placed

If the length of the longest word cannot fit in the user provided dimensions of the grid, the program shall output 'Grid cannot be formed, press any key to return to the home screen'; otherwise the program shall generate the grid in the output file (name provided by the user), display a success message, and give the user an option to return to the home screen by pressing any key

If the user presses S on the home screen, the user is asked to provide the following information one by one:

1) Name of the input file which has a grid in it (as in Q2 Assignment 3)

2) Name of the file with input to be searched. This file should have the following format:

The first line tells the dimensions of the input grid (i.e. number of rows and columns, separated by a space). The second line contains the number of test cases, n. The subsequent n lines contain one word each; (see Sample Input of Q2 Assignment 3)

3) Name of the output file where the results needs to be placed (in the format shown in Sample Output of Q2 Assignment 3)

In addition, the program shall also print the results of the search on console (in the same format) and give the user an option to return to the home screen by pressing any key

If the user presses Q on the home screen, the program exits.

Submission Instructions:

Submit a GitHub link of your program

Notes:

- Reuse your Assignment 3, do not work from scratch. It is mandatory to use your Assignment 3 code (improved versions of the Assignment 3 code are acceptable)
- Follow the software engineering principles especially Anticipation to Change
- Provide a quality solution with good correctness, maintainability, evolvability, understandability, reusability
- Follow SE guidelines, for example Indent your code, Comment your code, Use meaningful variable names
- Plan your code carefully on a piece of paper before you implement it.
- Write a single cpp file for the purpose, name should follow

the convention: **SectionB_RollNumber_A5**

Following the SE principles and providing quality solution carries marks