

## Assignment xx Algorithmic Design Document

Make a copy before you begin (File -> Make a copy). Add the Assignment # above and complete the sections below BEFORE you begin to code and submit with your Assignment to D2L (File -> Download -> PDF). The sections will expand as you type.

### zyBooks

Add your zyBooks screenshots for the % and assigned zyLabs completions below. Required percentages: all assigned zyLabs, Challenge Activity with at least 70%, and Participation Activity with at least 80%.

#### zyLabs, Challenge, and Participation % Screenshot:

10. CS 161 Structs

■ 100% ■ 100% ■ 100% ^

#### Assigned zyLabs completion Screenshot:

### Assignment

#### Program description:

Build a struct data table with restaurant names, cuisine offered and ratings. Allow users to print the entire list, search by name, or exit the program.

Before you begin coding, **you must first plan out the logic** and think about what data you will use to test your program for correctness. All programmers plan before coding - this saves a lot of time and frustration! Use the steps below to identify the inputs and outputs, calculations, and steps needed to solve the problem.

#### Algorithmic design:

- Identify all of the user input. What are the data types of the inputs? Define the input variables.

User input is menu selection or search parameter for restaurant names matching.

- Describe the program output. What is displayed to the user? What are the data types of the output? Define the output variables.

Output will be the welcome menu, print all values, or search UI.

c. What calculations do you need to do to transform inputs into outputs? List all formulas needed, if applicable. If there are no calculations needed, state there are no calculations for this algorithm.

Only calculations are to evaluate for user entry validity or to match the user entered search value against the data table to find all restaurant names that match.

d. Design the logic of your program using pseudocode or flowcharts. Here is where you would use conditionals, loops, functions or array constructs (if applicable) and list the steps in transforming inputs into outputs. Walk through your logic steps with the test data from the assignment document.

HEADER:

    DEFINE struct for data table

DECLARE struct array

READ text file into struct

DISPLAY welcome()

DISPLAY menu()

LOOP start- exit when menuSelect() = 'q'

INPUT menuSelect()

    EVALUATE user entry

    EXECUTE option

IF "print all" THEN OUTPUT all data values in struct

IF "search" THEN INPUT search parameter to compare against struct names

SEARCH for all matching restaurant names in struct array

OUTPUT all matching restaurant names