COP-4338 Systems Programming

Programming Assignment 5

Knight Foundation School of Computing and Information Sciences

In this assignment, you are asked to write a program that converts a file format to another. It should support the following formats:

- *.csv* (comma separated values) file: stores tabular data in plain text. Each line of the file represents a table row containing one or more cells separated by commas.

- *.tl5* file: stores tabular data in plain text. Each line of the file represents a table row containing one or more cells separated by '|' character. Each cell is 5-characters long and contains a left-aligned string. If the string stored in a cell has $n < 5$ characters, the rest of it will be filled with spaces; i.e. there will be $5 - n$ extra space characters in the field *after* the string. However, if a string with more than 5 characters is supposed to be placed in a cell, only its first 5 characters is stored in the cell.

1 Program Commands

- **convert source.xxx destination.yyy**: this command converts source.xxx to destination.yyy where source.xxx is the name and extension of the file that user wants to convert and destination.yyy is the name and extension of the file in which the user wants to store the result of format conversion.

- **quit**: ends the program.

2 Program Output

As the response to "covert" command, your program must either print out a message announcing that the file conversion is successful or print an error message if the source file format is not consistent with the source file extension.

3 50% Bonus Part

As the bonus part, the program must support the following formats specified below:

- *.tr9* file: stores tabular data in plain text. Each line of the file represents a table row containing one or more cells separated by '|' character. Each cell is 9-characters long and contains a right-aligned string. If the string stored in a cell has $n < 9$ characters, the rest of it will be filled with spaces; i.e. there will be $9 - n$ extra space characters in the cell *before* the string. However, if a string with more than 9 characters is supposed to be placed in a cell, only its last 9 characters is stored in the cell.

- *.tc9* file: stores tabular data in plain text. Each line of the file represents a table row containing one or more cells separated by '|' character. Each cell is 9-characters long and contains a center-aligned string. If the string stored in a cell has $n < 9$ characters, the rest of it will be filled with spaces; i.e. there will be $\lfloor \frac{9-n}{2} \rfloor$ extra space characters in the cell *before* the string and $\lceil \frac{9-n}{2} \rceil$ extra space characters in the field *after* it. However, if a string with more than 9 characters and odd length is supposed to be placed in a cell, only its middle 9 characters is stored in the cell. In the case that the length of original string is even and greater than 9, its middle 8 characters must be stored in the cell (plus an extra space character).

4   Submissions

You need to submit a *.zip* file compressing the C source file(s) related to the assignment (*.c* files) and **a readme file specifying which of the following conversions are supported by your program**:

from/to	csv	tl5	tr9	tc9
csv	Y/N	Y/N	Y/N	Y/N
tl5	Y/N	Y/N	Y/N	Y/N
tr9	Y/N	Y/N	Y/N	Y/N
tc9	Y/N	Y/N	Y/N	Y/N