CS390-01: Unix Programming — Program #3

Due at beginning of class, Wed., Oct. 18 — (20 points)

This assignment covers some basic standard ANSI C programming using arrays of character arrays. You are to write a program to prompt the user for up to 10 sentences (each sentence has a maximum size of 100 characters). You must store your sentences in an array of character arrays, that will be allocated dynamically using the C malloc function as you gather info for the program. For example, your initial variable declaration might look like this:

```
char **mySentences;
```

Prompt the user and read in their sentences (see sample i/o below). Convert each sentence to upper case, and after gathering all of the sentences, print them out. Count the number of characters and the number of characters not including white space.

You MUST write functions to perform subtasks for this problem. These need to be in a separate .c file from the main program. At a minimum, you must implement the following two functions:

```
void convertSentence(char *sentence);
void convertAll(char **sentenceList, int numOfSentences);
```

The first function takes a character array and converts it to all upper case. The second takes your array of all sentences and converts them all to uppercase.

NOTE: The only built-in C utility for characters and character strings that you may use are toupper(), get/fget, getc/fgetc, gets/fgets, printf, scanf, malloc, and free. If there is another utility you wish to use, you must check with me first.

Sample execution is on following page.

Other Requirements:

- Your program must be written in C, NOT using C++ statements.
- Comment your program, and all variables, to indicate what it does
- Use good variable names, where appropriate. Make sure you have a block of comments at the top of your program and each function explaining its purpose. Include your name!
- Include a makefile to compile this program on linux.
- Your code must compile with no warnings.
- When you have completed the assignment, zip your .c, .h and makefiles together to upload to canvas as a single file.

Sample Execution

```
Welcome.
Please tell me how many sentences you wish to enter (no more than 10): 4

You entered 4. Please enter your sentences one at a time.
A sentence can only store 100 characters.

Enter Sentence #1: My name is beth.
Enter Sentence #2: Hello.
Enter Sentence #3: Goodbye 123
Enter Sentence #4: I'm done

Your Converted Sentences are:

MY NAME IS BETH.
HELLO.
GOODBYE 123
I'M DONE

There are 41 Characters, or 36, not including the whitespace


End Program 3
Press any key to continue . . .
```