ELEC 377 Lab 1: Description of the Program

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Description of the Program
This program implements a shell program. It reads in a command line from the user and separates it into words. It then uses the first word of the command line to call the C function that implements the command using a table, which is implemented as an array.

- The **splitCommandLine** function goes through the user input and finds the beginning of each word which is separated by the space character. The string is modified by replacing some of the space characters with null characters to terminate each word. It then stores the pointer of the beginning of each word from the commandBuffer array, and returns the number of words which is the number of pointers in the args array. If strchr returns a value NULL, it means that we are the end of the array and the loop can break.
- The **skipChar**, which skips over a given character in a string. The function returns a pointer to the first character after the skipped character.
- The **dispatch table** associates the name of a command with the function that implements the command.
- The **doCommand** function executes commands after they have been split into words. It compares the first field of each element of the array to args[0]. If true, then it calls the associated command function and returns from doCommand. It exits the loop when the first field of the entry is NULL. If it reaches the end of the array without a match, then prints an error that the command is not recognized.
- The functions pwd, ls, cd, exitFunction function were implemented in step 6 and implement built-in functions such as getcwd in the pwd function.

Features of C Langage
- The doCommand function uses **strcmpand** and **fprintf** functions which are features of the C language.
- When declaring the command dispatch table, the **length of the array was not specified** as the C compiler computes the length of the array for you.
- The **getcwd** function was implemented in the pwd command. getcwd function allocates the string.