

Lab 1 Program Description

In this laboratory, a shell was created. A shell is a program that a user can use to interact with the operating system. The shell created in this lab uses C coding to implement some standard Linux commands. The shell takes in strings from the user and separates them into individual words representing commands with the associated parameters. Functions *skipChar* and *splitCommandLine*, ensure the input has the correct spacing and word separation needed for command recognition and implementation. The commands implemented by the shell program are *exit*, *pwd*, *ls*, and *cd*. The *exit* command exits the current shell. *pwd* prints the working directory and path in the shell. *ls* is used to print out the current files in the working directory. *cd* is used to change the current working directory to a specified new directory or the home directory if no new directory is specified. The program utilized some special features of the C language such as a typedef for a pointer to a function and filters. The typedef capabilities increased the program's readability and allowed for a more understandable and efficient dispatch table. Filters were used for the implementation of the *ls* command. The program also uses functions from the *pwd.h* library included in Linux for proper implementation of the *cd* command. Utilizing the special features was the largest difficulty faced while developing the program as they had not been used by this group. Specific difficulties faced while building the shell can be found in the appropriate documentation, [377_program_description_lab.pdf](#).