Lab 3 Writeup – Group 22

Emma Chan (20206641)

Jake Moffat (20212243)

The shell.c main function's role is to initialize the args array and the commandBuffer in order to use them in the command line functions. There is also a while loop that waits for command input. The input that gets stored in the commandBuffer which has the newline character, the only placed at the end of the input string, removed and then passed to the splitCommandLine function. splitCommandLine uses a function skipChar, whose role is to skip the desired character, in this case, the space character. Then splitCommandLine creates a pointer that points to the first character in the input and stores the pointer in the args array. The splitCommandLine then finds the first space after the marked word and changes it to the null character. This entire process gets repeated for as many words as there were inputted into the commandBuffer, if it is within the set max number of arguments. The splitCommandLine function proceeds to return the number of arguments and, as long as the value is greater than 0, the doCommand function is called. This new function uses a struct called commandTable to compare the input to any defined commands.

The special C feature that is used is the function pointer. The function pointer is with the command name within the command table that contains the string. This pointer is used to call the function and pass the user input to the command. First, is the exit command whose role is to call the function exit(0). Next is the ls command, which lists every file in the current directory. This command can also be called with the parameter "-a" to show all of the hidden files in the chosen directory. If this parameter is not used, the hidden files are stored away by the filHid function, which filters out all hidden files from the function scanDir. Additionally, the pwd command lists the current working directory to the command terminal. Finally, the cd command is used to change the current directory to a different one.