

lab 1 report

Task 1:

Makefile: changed name of "shell2" to "shell".

Shell.c:

- The prompt variable should be changed.
- Lines 31–34: If an error occurs, exit the program.
- Lines 36–38: Print the prompt and flush everything to the screen if there are no errors.
- Line 13: Set the size of the prompt to 80 because a command can only be 80 characters long.
- Tokenize each command from the command line in lines 63 to 68.
- modify directory function on lines 75–76.
- Print out the current directory on lines 78 and 79.
- Prints strings and variable values between lines 81 and 92.
- Lines 94–95: Shell is terminated.
- Prints the environment variables' most recent values in lines 97–98.
- Set environment variables on lines 100–102.

Task 2:

- In line 106, we fork off a child process that handles other commands if the command is not one of our built-in commands.
- Lines 107–112: Using the `execvp()` function, we run the command if we are in the child process. In the event that `execvp()` throws an error, the program continues to line 110 and prints the error.

Task 3:

- In lines 69 to 72, if the final token on the command line is a "&," the background process boolean value is set to true, and the last token is removed.
- Once the background procedure is complete, the shell will return a new command line.
- Lines 113–115: The program assigns `pid2` the value -1 if we are in a background process, which signifies that the process will be run throughout the subsequent loop.

Task 4:

- Function to handle user signal and end foreground process on lines 145–147.
- Line 26: Waits for user signal before ending foreground process, but does not kill shell as a whole.
- Take user input at lines 108 and 122 and disregard it.

Task 5:

- Lines 118–120: We remove another youngster if we are not going through a background check.
- We disregard user signals in lines 122–123 and wait for 10 seconds.
- If the process hasn't finished, we kill it by killing its pid in lines 124–126.