

27760 Utku Alkan Report

The “grep” command searches a specific string of characters from a file or another command’s output. “-w” option is for searching a specific word. In order for the word to be found, the word in the file must not include a letter, digit, or underscore next to it. Also, the beginning of the line or end of the line will not be counted as a word-constituent character too. I picked the “grep” command because we were already using grep for this homework so I wanted to be more knowledgeable. I chose the “-w” option since searching for a specific word instead of a string seemed like a good constraint for the grep command to me. Also, in the output.txt file, it looks good. Moreover, w means win.

Firstly, the program is in the shell process. Then I decided to create two forks (the second one is in the first fork’s child) to make writing or reading easier and to satisfy the terminal output requirements for PIDs. Also, I defined a pipe in the shell process. After two forks are completed we have one child and one grandchild. In the grandchild’s parent, I used dup2 to write the “man grep” command to the pipe and I executed it with “execvp”. In grandchild, first I called “wait” to make sure the PID of the grandchild is written to the console after the child. Then, I redirected the output from the terminal to a file called “output.txt”. Then, I read the pipe with dup2 again and combined my command “grep -nA5 \\-w,” with “man grep”. “-n” is for printing the line numbers. I put this to make users job easier if he/she wants to check the manual page. “-A” is representing ‘after’ so when a string is found it will print lines after that string. “-5” is telling how many lines need to printed and I chose 5 since ‘-w’ command’s explanation was 5 lines. I used ‘\\’ to solve the special character problem. After, I executed it with “execvp” again. Lastly, in grandparent of grandchildren or parent of children “wait” is called so that grandparent can wait until everything is done and then print its value and finish the process.

So grandchild (grep process) => grep -nA5 \\-w,

child (man process) => man grep