

Cat command concatenates files and prints on the standard output. -n command numbers all output lines. I picked this command and option because it provides a nice way of viewing the files stored in the current directory. Also, with -n option the line numbers are printed out alongside with the content of the files to the console. The cat command can be used to view the content of multiple files at once in a quick and organized way.

The main process represents the shell process in the code. The shell process forks and creates a child process which is used for the pipe operation. The shell process is highest in the process hierarchy. Child process initializes the pipe command then forks to process grep and man separately. The parent process of the forked process executes the man command and writes to the writing end of the pipe (input end). Man process is the second in the process hierarchy. The child process of the forked process reads from the input coming from the input end of the pipe then executes grep command with using the input. The grep process waits until the man process is terminated, since it needs the input coming from that process to call the execlp() to create its separate process. The grep process is the last in the process hierarchy. When grep process terminates, the system goes back to the shell process, since it waits until all other processes ends.