Simple-Shell

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Problem statement

It is required to implement a Unix shell program. A shell is simply a program that conveniently allows you to run other programs.

Required features

- The internal shell command "exit" which terminates the shell
- A command with no arguments
- A command with arguments
- A command, with or without arguments, executed in the background using &.

Main functions

read_line

Reads the current command from standard input with no limit on the size and returns it. Terminates the program if EOF is encountered or error while reading the line.

parse_command

Takes a command as string and splits into strings delimited by whitespaces which are returned as char** - array of strings - dynamically resized to fit the number of arguments of any command. It additionally takes an integer pointer to return the number of arguments of the current command.

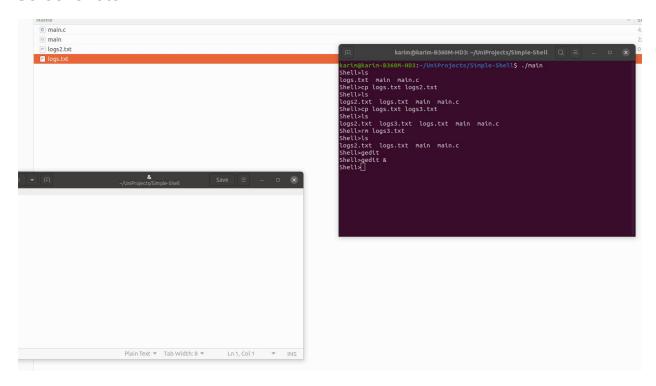
execute_command

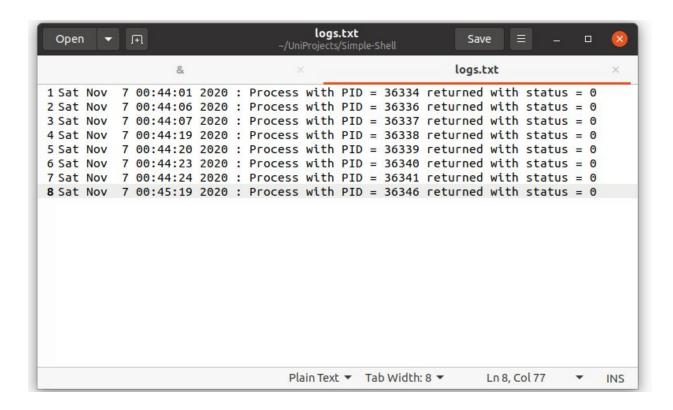
Takes an array of strings resulting from parse_command function and the number of arguments. If it is "exit", it terminates the program otherwise it forks the process and executes the command using execvp and either waits for the process or not depending on whether "&" argument is provided.

Main loop

Continues to call read_line, parse_command and execute_command until the program is terminated.

Screenshots





Screenshots from System Monitor

