

OS Assignment-2

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Contribution : Entire assignment

SimpleShell implementation:

1. Executing commands

- a. Run an infinite loop.
- b. Take user input and parse it to get the command and the arguments.
- c. Pass the commands and arguments to the launch() function which in turn call run_command() function.
- d. Use fork() system call to create a new child process.
- e. Use execvp() system call to replace the current process with the new process.
The executable along with its command line arguments are passed to the to execvp() syscall as arguments.
- f. Input command is executed.

2. Storing History

- a. Struct command_history stores all the information about a command.
- b. All commands are stored in the array history made up of struct command_history.

3. Handling Pipes

- a. Piped commands are handled by the function run_piped_commands().
- b. It creates pipes for inter-process communication, forks child processes for each command, redirects their input/output using dup2, and finally waits for all child processes to complete.

Commands that can't run on SimpleShell:

1. cd : cd is not an executable file present at usr/bin.
2. Background process (&) : the given simple shell does not support background process.
3. Command with quotes(" ") : the given simple shell does not support commands involving quotes.
4. Signals : Many signals like SIGSTP, are handled by the simple shell.

Private Github Repository link : [abhishek70/Simple-Shell \(github.com\)](https://github.com/abhishek70/Simple-Shell)