

TRShell

OS Project Presentation

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Project Idea

Motivation

- ▶ Interested in the inner workings of Linux
- ▶ We like optimizing workflows
- ▶ We love shortcuts
- ▶ Tiling window workflow

Project Idea

Importance

- ▶ simple layout
- ▶ easy to overview multiple shells
- ▶ focus on running multiple jobs
- ▶ intuitive to use
- ▶ minimalistic but appealing appearance

Implementation

- ▶ C Language (maybe some x86 Assembler)
- ▶ Python 3
- ▶ TRSh scripting xD (.trsh)

Hardware / Software Requirements

Setup

- ▶ Linux operating system
- ▶ gcc & gdb for compilation and debugging of C code
- ▶ editor to write code
- ▶ easy as required tools are part of most Linux distros by default

Time Plan

Vorgang	Anfang	Ende
Prepare presentation	04.04.22	06.04.22
Project idea presentation	07.04.22	08.04.22
Read source code of other shells	11.04.22	15.04.22
UI	18.04.22	04.05.22
<i>- interactive mode: loop -> Read-Eval-Print-Loop (REPL) - read input, parse and execute until: exit, shutdown or reboot</i>		
<i>Printing Prompt Strings: PS1, PS2, ..., PS4</i>		
MS - 1	05.05.22	05.05.22
<i>Working shell prompt: - You can enter the shell - Enter some first commands - Exit shell</i>		
Command Line Interpreter	05.05.22	18.05.22
<i>- Parser: scans input and breaks it down to tokens - Token: one or more characters -> single unit of input - Abstract Syntax Tree (ATS): high level representation of the command line -> given to executor</i>		
Builtin utilities	19.05.22	27.05.22
<i>- Set of commands that are implemented as part of the shell program itself - example: cd, fg, bg</i>		
Symbol table	19.05.22	27.05.22
<i>- Store information about variables - History implementation</i>		
MS - 2	19.05.22	19.05.22
<i>- The default commands are processed correctly: command, flags and passed arguments</i>		
Shortcuts	24.05.22	06.06.22
<i>- Navigate different shells with shortcut - Move split windows around</i>		
Tiling windows	24.05.22	06.06.22
MS - 3	30.05.22	30.05.22
<i>- Every shell functionality, inclusive history, works</i>		
Implement personal scripting language	03.06.22	09.06.22
Debug last errors	10.06.22	15.06.22
MS - 4	10.06.22	10.06.22
<i>- TRShell is finished - Time to debug!</i>		
Prepare presentation	13.06.22	15.06.22