

Computer Workshop Assignment No.6

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1 Git and Github

1.1 Repository Initialization and Commits

1

Open github website and create repo using the free button to top left

2

Choose the name(final-assignment) and complete the creation process using the create repo button

3

Initialize git using the git init command and add changes using the git add command

4

Add remote using the git remote add origin `<your_repo_url>`

1.2 GitHub Actions for LaTeX Compilation

1

Create yml file and save it at .github/workflows

2

Push to the github repo using git push command

2 Exploration Tasks

2.1 Vim Advanced Features

1

Macros: Macros allow us to use sequence of commands.

2

Multiple Registers: Vim uses multiple registers that allow us to quickly store and retrieve texts.

3

Plugin: Like other apps vim plugin allows us to customize our workflows and improve our experience

2.2 Memory profiling

Dynamic allocation allows us to manage the memory in deeper levels, to implement dynamic allocation we should use commands like malloc

2.2.1 Memory Leak

Memory leak happens when a memory address has been dynamically allocated and never be released. Over time it consumes the available memory and causes problems and crashes.

2.2.2 Memory profilers

Valgrind is a program that has been deployed in C and it's a testing tool for C and C++. It can be used to optimize the memory management, detect leaks and find access issues.

2.3 GNU/Linux Bash Scripting

2.3.1 fzf

fuzzy searching

This searching algorithm matches results by similarity instead of exact matches, that's useful for cases where there are minor spelling and alternative spellings.

ls | fzf

At first the ls lists all files and then pass them to the fzf to display and fuzzy search on it.

2.3.2 Using fzf to find your favorite PDF

The first part finds all pdf files in the folder we look and then the second part implements the fuzzy search.

```
find . -type f -name "*.pdf" | wc -l | fzf
```

2.3.3 Opening the file using Zathura

Zathura is a FOSS program, zathura is also a plugin based program. At first we should install zathura use source and instruction that has been explained in the zathura website.

```
zathura $(find . -type f -name "*.pdf" | wc -l | fzf)
```

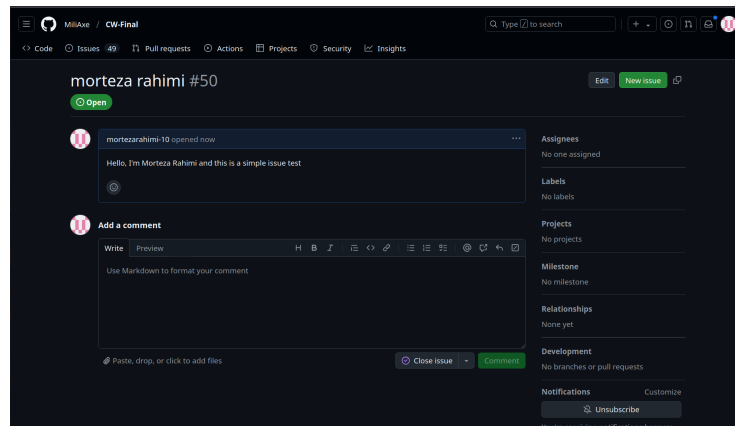


Figure 1: this is the issue that i've created

3 Git and FOSS

3.1 Issues

3.2 FOSS contribution

I think by contributing we learn new thing, So i wanna contribute to FOSS project that can teach me new things for example i don't wanna be professional in blockchain but i'm going to contribute in that field in the future.