

KL UNIVERSITY

Department of Electronics and Communication Engineering

END SEMESTER REPORT

Submitted By

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Chapter 1

Student Details

- **Name:** R. Veera Sai
- **Roll Number:** 2400040255
- **Department:** Electronics and Communication Engineering
- **Institution:** KL University
- **Linux Distro Used:** Ubuntu

Chapter 2

Linux Distribution Used – Ubuntu

Ubuntu Linux was used for all activities related to:

- GPG key generation
- Encrypted emails
- Self-hosting (Wikmd)
- Installing privacy tools
- Open-source contributions

Ubuntu is a Debian-based operating system known for:

- Excellent hardware support
- User-friendly interface
- Stable package management (APT)
- Best environment for developers and open-source contributors

Chapter 3

Encryption and GPG

GPG (GNU Privacy Guard) is used for secure encryption, signing, and verifying messages.

Generating a GPG Key

```
gpg --full-generate-key
```

Listing Keys

```
gpg --list-keys
```

Exporting Public Key

```
gpg --armor --export <email>
```

Using GPG for Git Signed Commits

```
git config --global user.signingkey <key-id>
git config --global commit.gpgsign true
```

Chapter 4

Sending Encrypted Email

To send an encrypted email:

1. Import the recipient's public key
2. Encrypt the message

Encrypt

```
gpg --encrypt --recipient "<email>" message.txt
```

Decrypt

```
gpg --decrypt message.txt.gpg
```

Chapter 5

Privacy Tools (From prism-break.org)

I explored multiple privacy tools. The following 5 were used and studied:

1. Mozilla Firefox

A privacy-focused browser with enhanced anti-tracking features.

2. DuckDuckGo

Search engine that does not collect or store search data.

3. ProtonMail

Encrypted email provider offering end-to-end security.

4. Signal Messenger

Secure messaging app using the Signal Protocol.

5. Tor Browser

Provides anonymity using onion routing technology.

Chapter 6

Open Source License Used – MIT License

For my open-source contributions, the **MIT License** was used. It allows:

- Free usage
- Modification
- Redistribution
- Commercial usage

It is one of the most permissive and commonly used licenses.

Chapter 7

Self Hosted Server – Wikmd

About Wikmd

Wikmd is a self-hosted Markdown-based wiki engine. It runs locally and is ideal for documentation.

Installation Steps

```
sudo apt update  
sudo apt install python3 python3-pip  
pip install wikmd  
wikmd --init  
wikmd
```

Access the server via:

<http://localhost:5000>

Localized (Translated) Document

A translated (local language) version of the documentation was created.

Poster

A poster explaining installation, features, and usage was designed.

Chapter 8

Open Source Contributions – Pull Requests

Below are the merged pull requests along with screenshots.

PR 1 – The Turing Way

Link: <https://github.com/the-turing-way/the-turing-way/pull/4402>

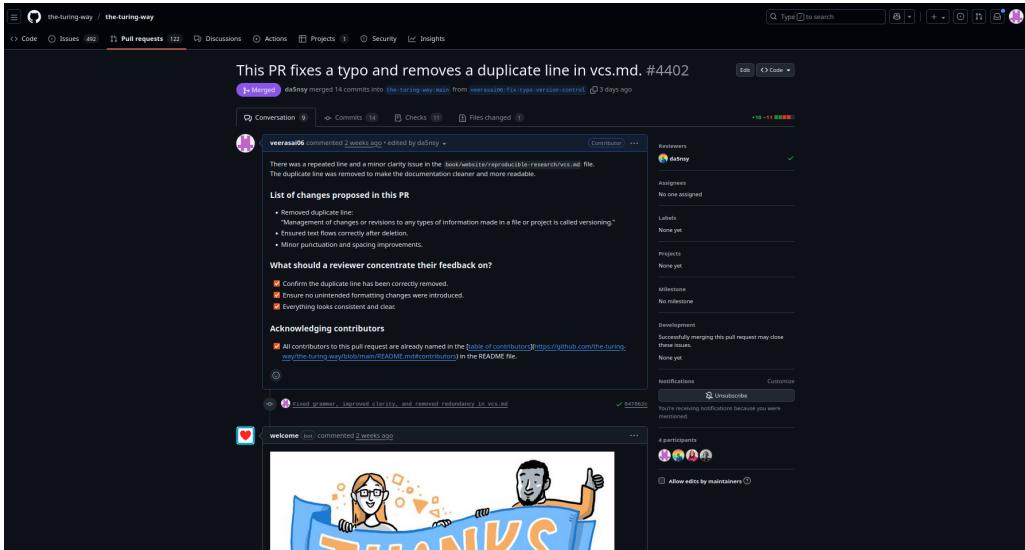


Figure 8.1: PR 1 – Merged Pull Request

PR 2 – Free Programming Books

Link: <https://github.com/EbookFoundation/free-programming-books/pull/12924>

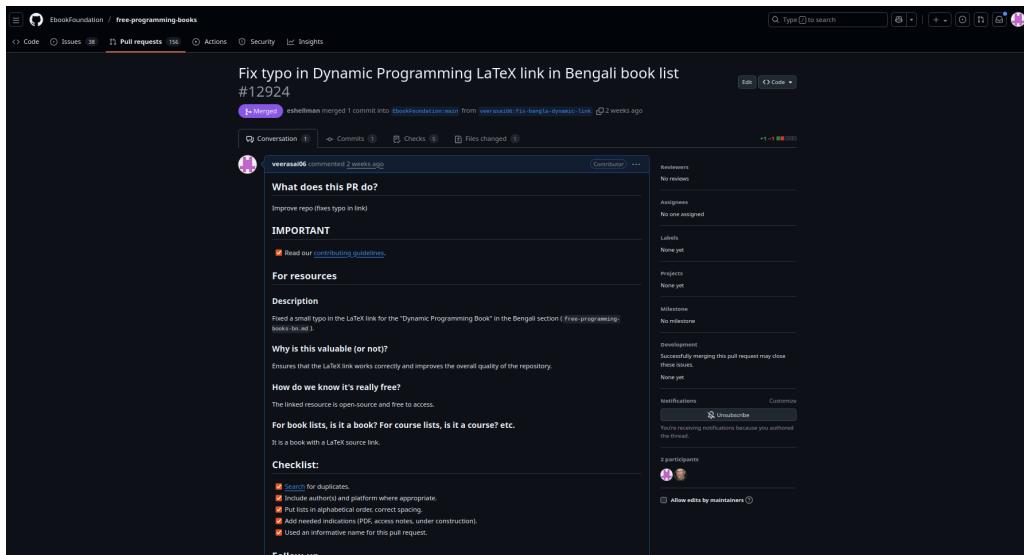


Figure 8.2: PR 2 – Merged Pull Request

PR 3 – .NET Docs

Link: <https://github.com/dotnet/docs/pull/49518>

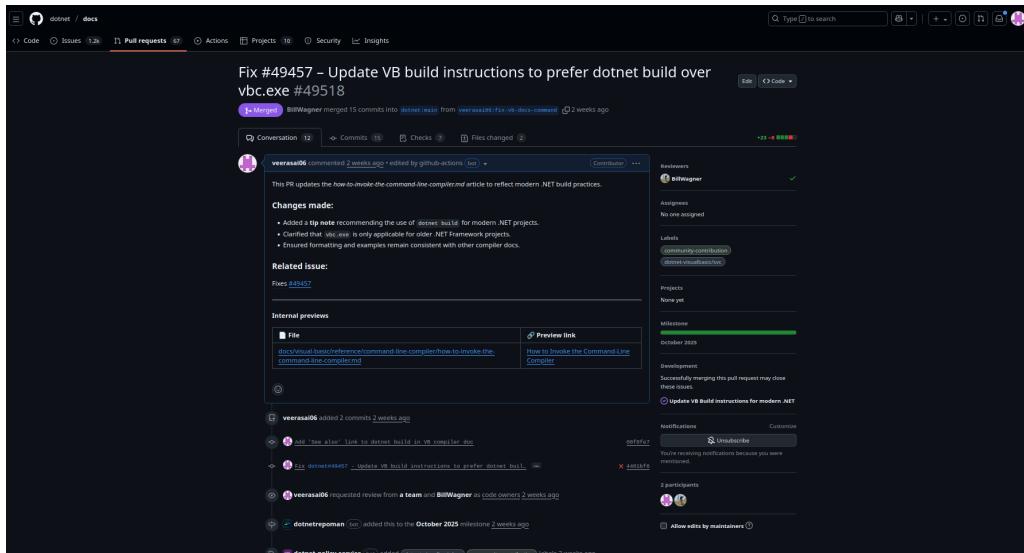


Figure 8.3: PR 3 – Merged Pull Request

PR 4 – Zero to Mastery

Link: <https://github.com/zero-to-mastery/start-here-guidelines/pull/23666>

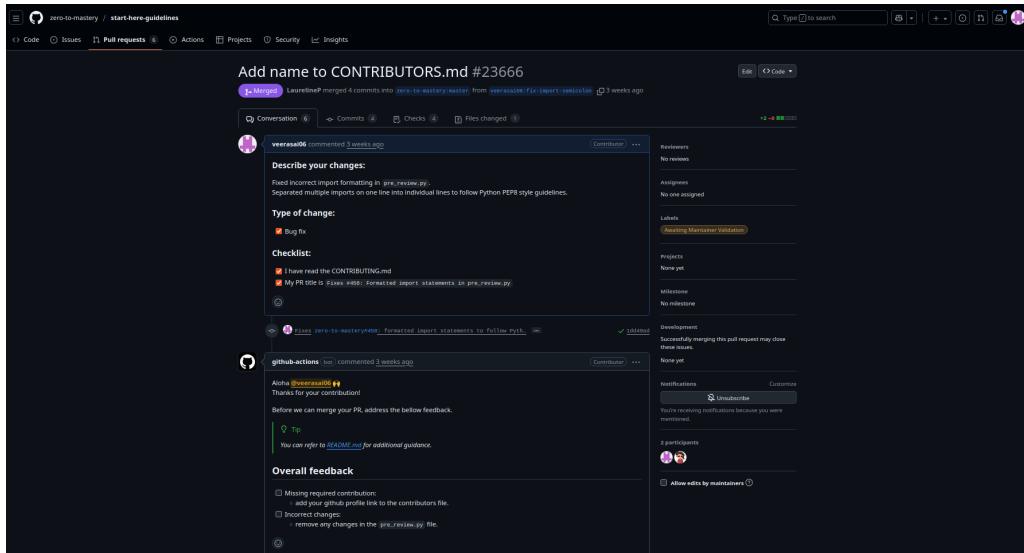


Figure 8.4: PR 4 – Merged Pull Request

PR 5 – OpenMetadata

Link: <https://github.com/open-metadata/OpenMetadata/pull/24014>

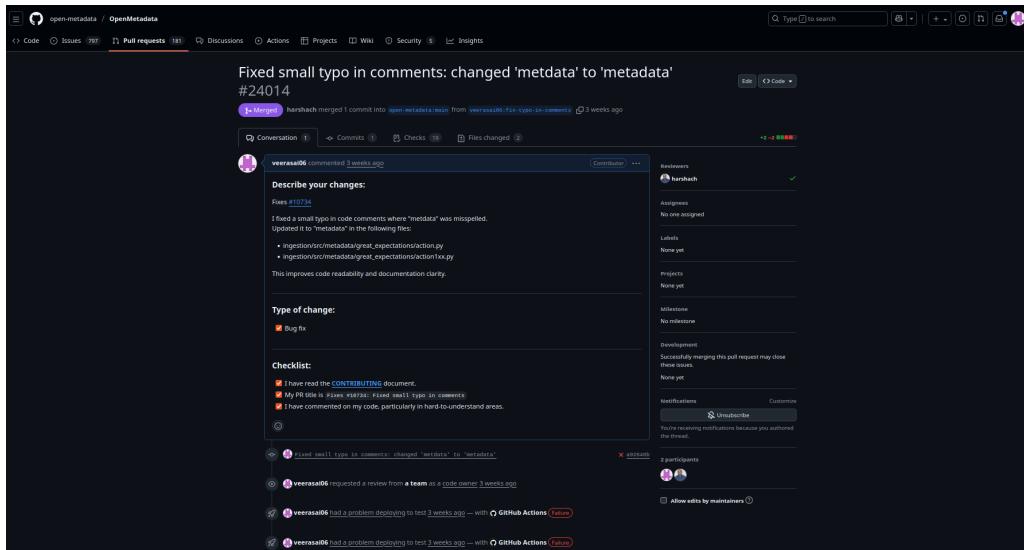


Figure 8.5: PR 5 – Merged Pull Request

PR 6 – firstcontributions

Link: <https://github.com/firstcontributions/first-contributions/pull/106095>

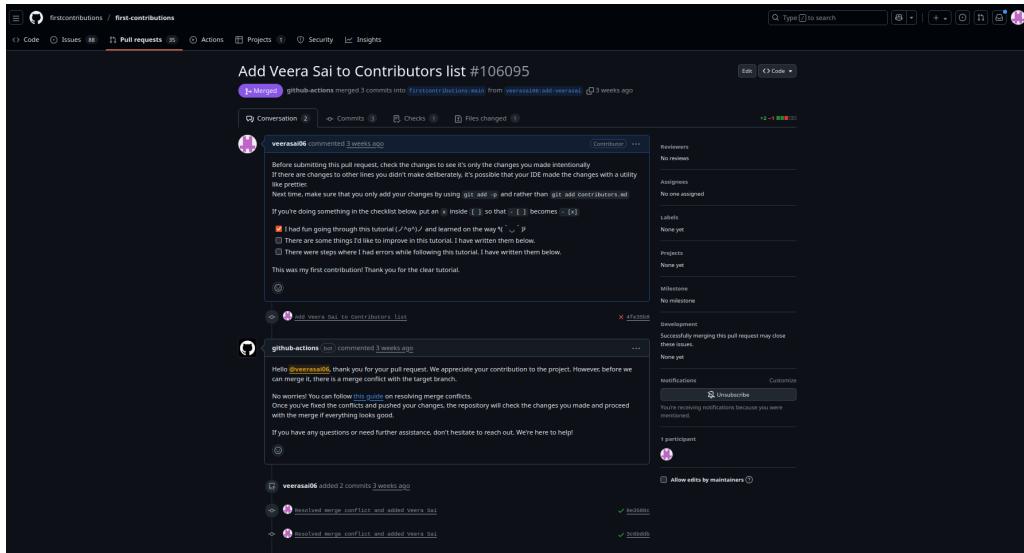


Figure 8.6: PR 6 – Merged Pull Request

Chapter 9

LinkedIn Posts

- **Self Hosting Post:** (https://www.linkedin.com/posts/v-steven-joy-61b247345_opensource-expo-wiki-ugcPost-7384212372959330305-83XY?utm_source=socialshare&utm_medium=android_apprcm=ACoAAFh8IP8BT0xDf3ZgLwVkPHiuyyONmEuUsYwutm_campaign=copylink)
- **PR Merge Post:** (https://www.linkedin.com/posts/rayi-veera-sai-b671ba355_hacktoberfest-opensource-developercommunity-activity-7395107588784431104-3GhG?utm_source=socialshare&utm_medium=android_apprcm=ACoAAFh8IP8BT0xDf3ZgLwVkPHiuyyONmEuUsYwutm_campaign=copylink)
- **Blog Article:** (<https://www.linkedin.com/pulse/my-open-source-journey-from-beginner-contributor-rayi-veera-sai-5ba9e>)