

KL UNIVERSITY

Department of Computer Science & Engineering

Open Source Report



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Semester: 3rd Semester
Course: Open Source Engineering(24CS02EF)
Academic Year: 2024–2025
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0) Front Page & Student Details

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- **Project / Report Title:** My Open Source Final Report
- **Course:** Open Source / Open Source Engineering
- **Student:** Vivek Kumar Rathour, Roll: 2400030562
- **Department:** CSE-1(HTE)
- **College:** KL University
- **Faculty:** Dr. Sripath Roy
- **Academic Year:** 2025–2026

1 About the Linux Distro You Used

Distribution Details

- **Distribution:** Ubuntu (LTS)
- **Version:** Ubuntu 24.04.3
- **Why chosen:** Personal preference and widespread community support.
- **Install method:** Dual Boot (or VM as per environment)

Installation Steps (brief)

1. Downloaded Ubuntu ISO (version: 24.04.3).
2. Created bootable USB and installed alongside existing OS (dual-boot).
3. Post-install: update packages using `sudo apt update && sudo apt upgrade -y`.

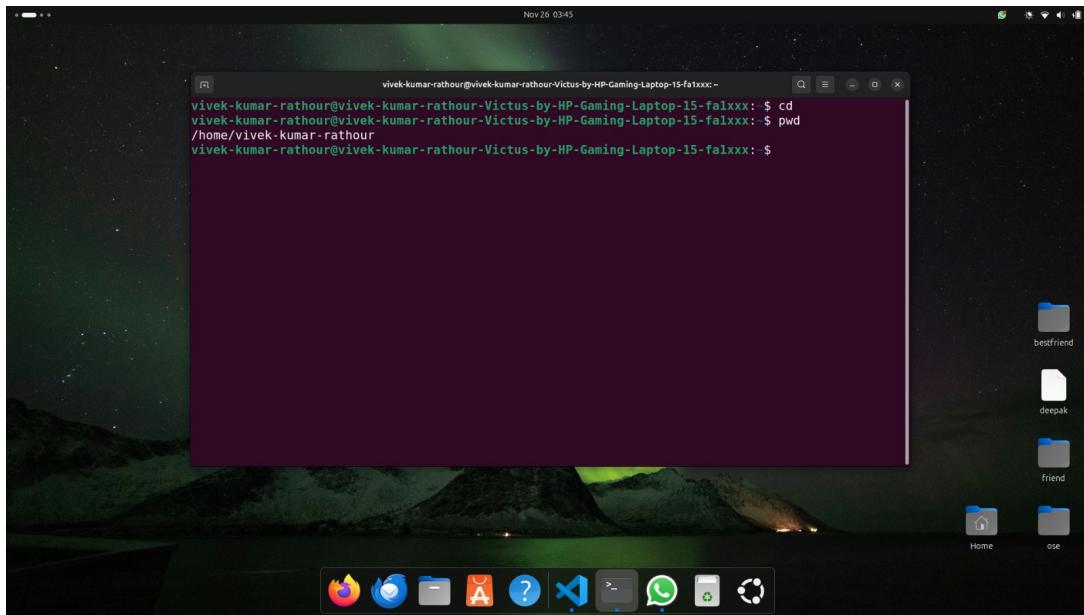


Figure 1: Opening My terminal for first time

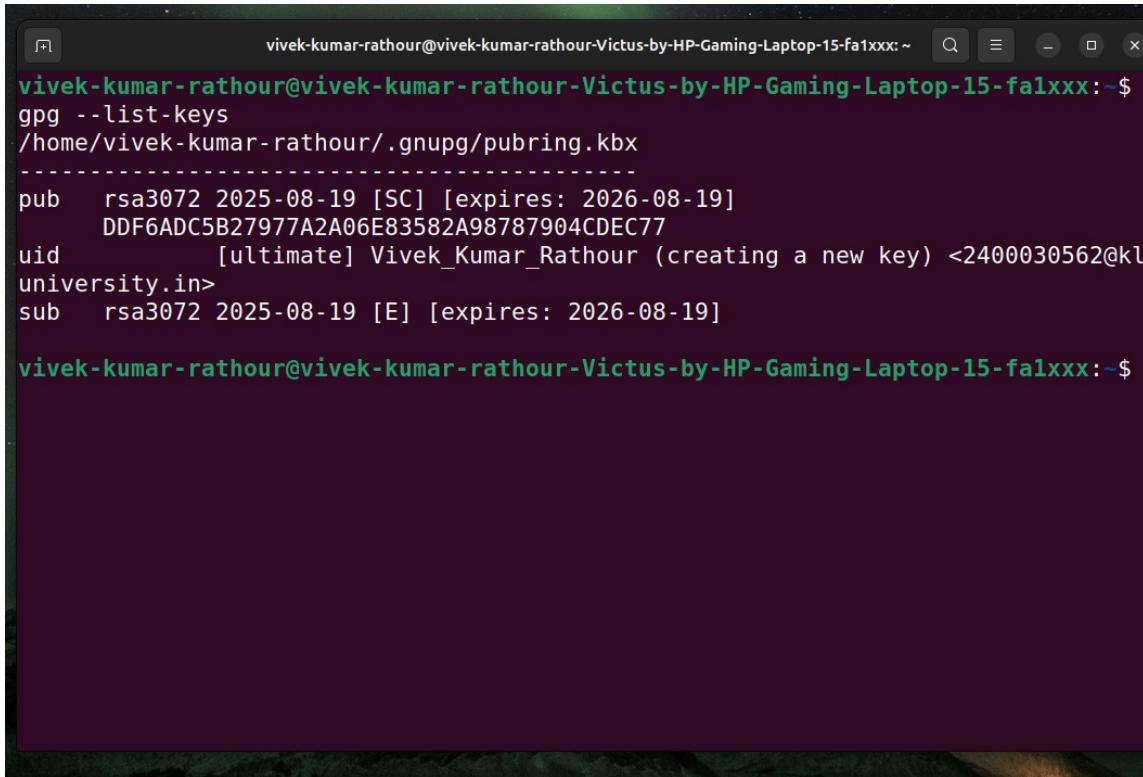
2 Encryption and GPG

Overview

GPG (GNU Privacy Guard) provides public-key encryption using an asymmetric key-pair model to ensure confidentiality, integrity, and authenticity.

Details (filled)

- **Email used for GPG key:** 2400030562@kluniversity.in
- **Generated key successfully:** Yes
- **Key fingerprint / Key ID:** DDF6ADC5B27977A2A06E83582A98787904CDEC77
- **User ID (UID):** Vivek_Kumar_Rathour <2400030562@kluniversity.in>
- **Screenshots:** See Figure 2



The screenshot shows a terminal window with the following text output:

```
vivek-kumar-rathour@vivek-kumar-rathour-Victus-by-HP-Gaming-Laptop-15-fa1xxx:~$ gpg --list-keys
/home/vivek-kumar-rathour/.gnupg/pubring.kbx
-----
pub    rsa3072 2025-08-19 [SC] [expires: 2026-08-19]
      DDF6ADC5B27977A2A06E83582A98787904CDEC77
uid          [ultimate] Vivek_Kumar_Rathour (creating a new key) <2400030562@kluniversity.in>
sub    rsa3072 2025-08-19 [E] [expires: 2026-08-19]

vivek-kumar-rathour@vivek-kumar-rathour-Victus-by-HP-Gaming-Laptop-15-fa1xxx:~$
```

Figure 2: GPG: Listing generated keys on Ubuntu terminal (output from `gpg --list-keys`).

Suggested Commands (example)

```

1 # generate a key
2 gpg --full-generate-key
3
4 # list your keys
5 gpg --list-keys
6
7 # export public key
8 gpg --armor --export 2400030562@kluniversity.in > publickey.asc
9
10 # encrypt a file
11 gpg --encrypt --recipient 2400030562@kluniversity.in secret.txt
12
13 # decrypt a file
14 gpg --decrypt secret.txt.gpg > secret.txt

```

Listing 1: Example GPG commands — replace with actual used commands

3 Sending Encrypted Email

Tools Used

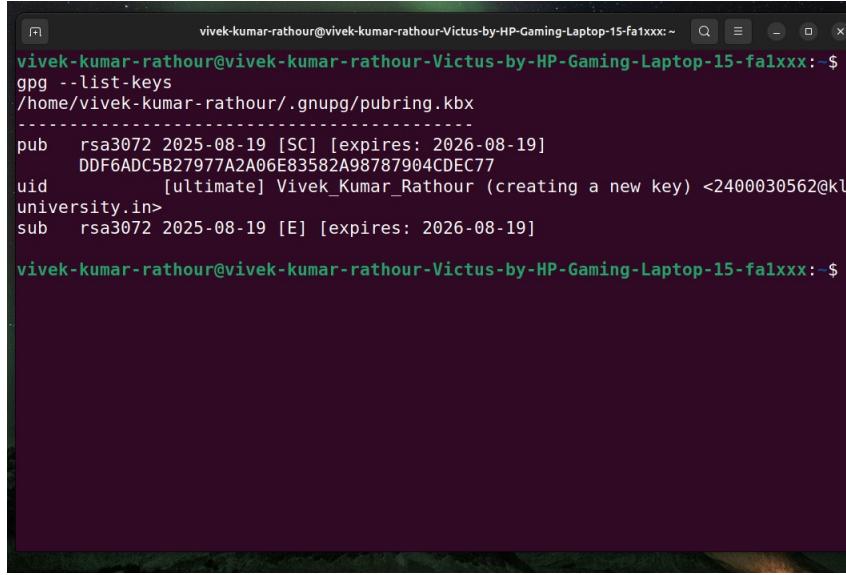
- Mail client: Thunderbird (configured with OpenPGP) — recommended.
- Email provider: 2400030562@kluniversity.in

Procedure (outline)

1. Import personal GPG private/public keys into Thunderbird (OpenPGP).

2. Verify recipient's public key fingerprint before encryption.
3. Compose message → select *Encrypt* → send.

Send successful? Yes



A screenshot of a terminal window titled "vivek-kumar-rathour@vivek-kumar-rathour-Victus-by-HP-Gaming-Laptop-15-falxxx: ~". The window displays the command "gpg --list-keys" and its output. The output shows a public key (pub) and a user ID (uid). The public key details are: rsa3072 2025-08-19 [SC] [expires: 2026-08-19] DDF6ADC5B27977A2A06E83582A98787994CDEC77. The user ID is [ultimate] Vivek_Kumar_Rathour (creating a new key) <2400030562@kluniversity.in>. The subkey details are: rsa3072 2025-08-19 [E] [expires: 2026-08-19]. The terminal prompt "\$" is visible at the end.

Figure 3: Screenshot: GPG keys

4 Five Privacy Tools (selected)

Below are five recommended privacy-friendly tools (selected by the author based on typical choices). Replace or edit as needed.

1. **Tor Browser** — anonymity and onion routing; avoid plugins and maximize privacy settings.
2. **Signal** — end-to-end encrypted messaging and calls.
3. **ProtonMail** — end-to-end encrypted email service.
4. **Bitwarden** — open-source password manager (self-hostable).
5. **Nextcloud** — self-hosted cloud and collaboration suite.

For each tool you can provide:

- Installation notes / commands: _____
- Screenshots (optional): place images in images/ and reference here.

5 Open Source License Used

Selected License

- **License chosen:** MIT
- **Reason:** Permissive, simple attribution requirement, widely used.

MIT License (inserted)

```
MIT License  
Copyright (c) YEAR Vivek Kumar Rathour  
Permission is hereby granted, free of charge, to any person obtaining a copy  
of this software and associated documentation files (the "Software"), to deal  
in the Software without restriction, including without limitation the rights  
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell  
copies of the Software, and to permit persons to whom the Software is  
furnished to do so, subject to the following conditions: ...
```

6 Self-Hosted Server — About & Installation

Service Hosted

- **Service:** Homer — A daily dashboard (memo-style homepage) used to collect quick links and notes
- **Hosting method:** Docker (self-hosted on local Linux machine)
- **Installation approach:** Docker + Docker Compose used for setting up Homer UI dashboard

Installation summary (Docker Compose example)

```
1 version: "3"  
2 services:  
3   homer:  
4     image: b4bz/homer  
5     container_name: homer  
6     ports:  
7       - "8080:8080"  
8     volumes:  
9       - ./assets:/www/assets  
10    restart: unless-stopped
```

Listing 2: Docker Compose file used to self-host Homer

Notes

- Place any custom icons or assets in the `assets/` folder beside the compose file.
- Start with `docker-compose up -d` and verify logs with `docker logs -f homer`.
- Use a reverse proxy (nginx) and optionally enable TLS (Let's Encrypt) for external exposure.

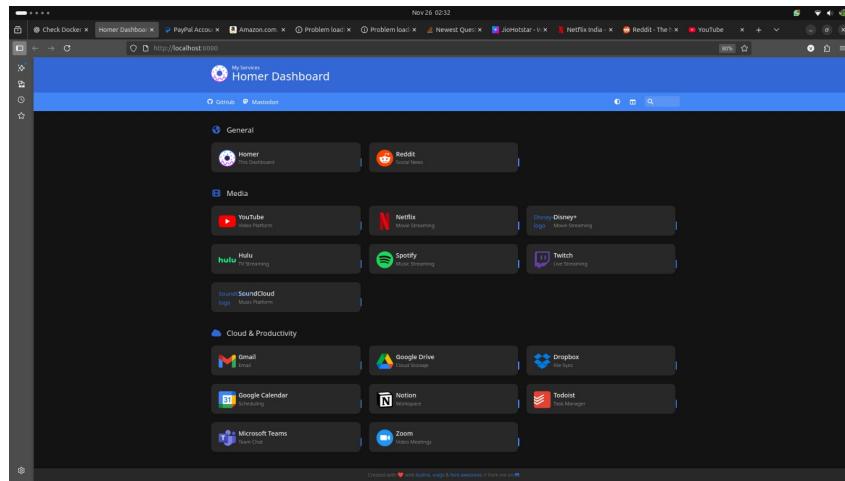


Figure 4: Self-hosted Homer dashboard (placeholder).

7 Open Source Contributions (PRs) and Status

How to list each PR (template)

- **Repository:** _____
- **Issue / PR link:** _____
- **Issue ID:** _____
- **Description:** _____
- **Files changed:** _____
- **Status:** _____ (Merged / Open / Closed)
- **Screenshot:** (add file if available)

PR 1

- **Repository:** firstcontributions/first-contributions
- **Issue / PR link:** <https://github.com/firstcontributions/first-contributions/pull/107025>
- **Issue ID:** #107025
- **Description:** Added my name "Vivek Kumar Rathour" to the Contributors list as part of the First Contributions onboarding project.
- **Files changed:** Contributors.md (1 line added)
- **Status:** Merged

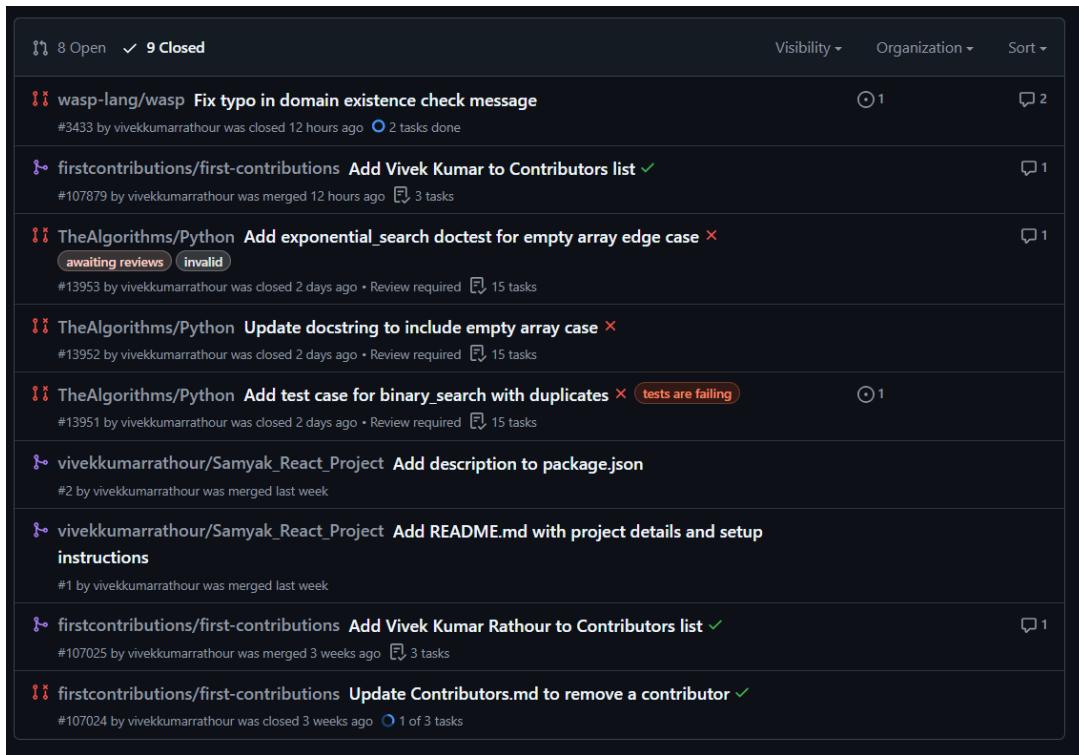


Figure 5: Screenshot of the PR's that I have created .

PR 2

- **Repository:** refinedev/refine
- **PR link:** <https://github.com/refinedev/refine/pull/7131>
- **Issue / description:** Fixes Supabase Realtime bug where multiple filters caused invalid payloads. Adds warning, uses only the first filter by default, and introduces escape hatch via `meta.realtime.allowMultipleFilters`. (Fixes issue #6360)
- **Files changed:** 1 file changed (36 additions, 99 deletions)
- **Status:** Open

8 Links of LinkedIn Posts

Below are two LinkedIn posts reflecting the project work (self-hosting) and the GPG/encryption write-up.

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1. Post 1 — Self-hosting implementation

https://www.linkedin.com/posts/vivek-kumar-rathour-67b155319_selfhosting-docker-linux-activity-73

Short summary: This post highlights my experience deploying the Homer dashboard through Docker on my Ubuntu system. It explains how I configured volumes, crafted a minimal compose file, verified logs, and added custom assets to personalise the dashboard. The write-up demonstrates how containerization made hosting a personal homepage simple and strengthened my practical Docker and Linux skills.

2. Post 2 — Blog / Write-up (GPG / Encryption)

https://www.linkedin.com/posts/vivek-kumar-rathour-67b155319_my-journey-of-open-source-activity-7

Short summary: This article documents my learning journey in cryptography and secure communication: generating GPG key pairs, checking fingerprints, exporting public keys, and sending/receiving encrypted messages. It focuses on practical command-line steps and lessons learned about identity verification and secure workflows.

A Full Terminal Logs

The following terminal logs capture the key practical steps performed during the course, including system updates, GPG key generation, Docker usage, self-hosting, and Git-based open source contributions.

System Update & Upgrade

```
sudo apt update  
sudo apt upgrade -y
```

GPG Key Generation

```
gpg --full-generate-key
# Selected RSA 3072-bit, validity 1 year
# UID: Vivek_Kumar_Rathour <2400030562@kluniversity.in>
# Fingerprint: DDF6 ADC5 B279 77A2 A06E 8358 2A98 7879 04CD EC77
```

GPG Key Listing

```
gpg --list-keys
pub    rsa3072 2025-08-19 [SC] [expires: 2026-08-19]
      DDF6ADC5B27977A2A06E83582A98787904CDEC77
uid    [ultimate] Vivek_Kumar_Rathour <2400030562@kluniversity.in>
sub    rsa3072 2025-08-19 [E]
```

Exporting Public Key

```
gpg --armor --export 2400030562@kluniversity.in > publickey.asc  
ls
```

Docker Installation

```
sudo apt install docker.io -y  
sudo systemctl enable docker  
docker --version
```

Running Homer Dashboard (Docker Compose)

```
docker-compose up -d  
docker ps
```

```
# Container: homer
# Ports: 8080 -> 8080
```

Git Commands for PR Contribution

```
git clone https://github.com/firstcontributions/first-contributions.git
git add Contributors.md
git commit -m "Add Vivek Kumar Rathour to Contributors list"
git push origin main
```

Git Commands for PR 2 (refine.dev)

```
git clone https://github.com/refinedev/refine.git
git checkout -b patch-2
git add .
git commit -m "fix: handle multiple filters safely"
git push origin patch-2
```

B Helpful Commands

A compact list of frequently used commands. Use these as a quick reference during installation and debugging.

- sudo apt update
- sudo apt upgrade -y
- gpg --full-generate-key
- gpg --list-keys
- docker-compose up -d
- docker logs -f homer
- git clone <repo>
- git add . && git commit -m "message" && git push