

OPEN SOURCE SOFTWARE REPORT

Submitted by

KANDULA KOMALI

2400032813

Y24 Batch HTE

Submitted To: DR.SRIPATH ROY

Department of Computer Science (HTE)

KLUNIVERSITY

November 25, 2025

0. Student Details

1 About the Linux Distro Used

I have used **Ubuntu Linux (WRITE VERSION e.g., 22.04 LTS)** for completing all open-source tasks. Ubuntu is a Debian-based Linux distribution known for its stability, security, and ease of use. It uses the GNOME desktop environment and provides powerful tools for developers like GCC, Git, SSH, GPG, and system utilities.

Features

- Open-source and highly customizable
- Secure and stable with LTS updates
- Supports programming languages like C, Python, Java
- Built-in GNOME interface for productivity
- Excellent support for Git and open-source workflows

2 Encryption and GPG

GPG (GNU Privacy Guard) is an encryption tool that provides secure communication using public-key cryptography.

Commands Used

```
gpg --generate-key  
gpg --list-keys  
gpg -e -r <email> file.txt  
gpg --output myfile.txt --decrypt myfile.txt.gpg
```

GPG generates a pair of keys: **Public Key** (shared) and **Private Key** (kept secret). Using these keys, I encrypted files and verified signatures securely.

3 Sending Encrypted Email

To send an encrypted email:

1. Export your public key using `gpg --armor --export <email> > mykey.asc`
2. Send the public key to the receiver.
3. Import their key using `gpg --import otherkey.asc`
4. Encrypt the message or file using `gpg -e -r <receiver_email> message.txt`
5. Attach the encrypted file (.asc or .gpg) to the email.

A screenshot of my encrypted email is included in the attachments.

4 Five Privacy Tools (prism-break.org)

I explored several privacy tools from PRISM-Break:

1. Signal – Secure Messaging App

Category: Communication Use: End-to-end encrypted messaging, voice calls, video calls. Why: No ads, no tracking, open-source, strong encryption. Platforms: Android, iOS, Windows, MacOS, Linux.

2. Tor Browser – Anonymous Web Browsing

Category: Web Browsers Use: Hides your IP and identity by routing traffic through Tor nodes. Why: Prevents tracking, fingerprinting, surveillance. Platforms: Windows, Linux, Mac, Android.

3. KeePassXC – Password Manager

Category: Security Use: Stores all your passwords locally in an encrypted vault. Why: No cloud sync by default, avoids data breaches, open-source. Platforms: Windows, Linux, MacOS.

4. ProtonMail – Encrypted Email

Category: Email Use: End-to-end encrypted email service. Why: Protects emails from unauthorized access; Swiss privacy laws. Platforms: Web, Android, iOS.

5. DuckDuckGo – Privacy Search Engine

Category: Search Engines Use: Search without collecting personal data. Why: No tracking, no profiling, shows unbiased results. Platforms: Web, Android, iOS.

5 Open Source Licence Used

I used the **HomeGallery** is an open-source self-hosted photo and video management software. The project is officially licensed under the MIT License.)

About the MIT License

- The MIT License is one of the most widely used open-source licenses. It is:
 - ; Simple and permissive
 - ; Allows anyone to use, copy, modify, merge, publish, distribute
 - ; Allows private or commercial use
 - ; Requires only one condition: include the original copyright notice

This makes the MIT License ideal for open-source projects because it gives users complete freedom while still protecting the copyright holder

6 Self-Hosted Server

I self-hosted the following server:

HOME GALLERY.

About

HomeGallery is a free, open-source, self-hosted photo and video gallery designed for people who want complete privacy and control over their media. It automatically scans your images and videos, generates previews, detects faces, allows smart search, and helps you organize everything—without depending on cloud services like Google Photos or iCloud.

HomeGallery runs on your own system (Ubuntu/Docker/Windows), meaning your photos never leave your device, making it a secure and privacy-friendly alternative.

Installation Steps

Example commands

```
sudo apt update
sudo apt install docker.io
sudo systemctl enable docker --now
mkdir -p ~/homegallery/data
mkdir -p ~/homegallery/config
mkdir -p ~/homegallery/photos
sudo docker run -d \
  -p 3000:3000 \
  -v ~/homegallery/photos:/input \
  -v ~/homegallery/data:/data \
  -v ~/homegallery/config:/config \
  --name homegallery \
  xypine/homegallery:latest
http://localhost:3000
```

Localized (Translated) Document

I translated the documentation into **Telugu**:

- WRITE 2–3 LINES OF TRANSLATION HERE

7 TextImport

telugu.txt

Poster

Poster Attached Below:



HTE DEPARTMENT OPEN SOURCE ENGINEERING

HOME GALLERY

Home-Gallery is a self-hosted open-source web gallery to browse personal photos and videos. Featuring tagging, mobile-friendly design, and AI-powered image and face discovery. It helps you privately browse your local media without relying on cloud services.

LICENSE

MIT License

Highlights / Features

- Self-hosted, local NAS support
- Privacy-first, no cloud dependency
- Mobile-friendly, fast user experience
- AI-powered image and face discovery
- Tagging and smart media browsing
- Supports multiple media source directories
- Designed for tech-savvy users managing their own data

Team Members

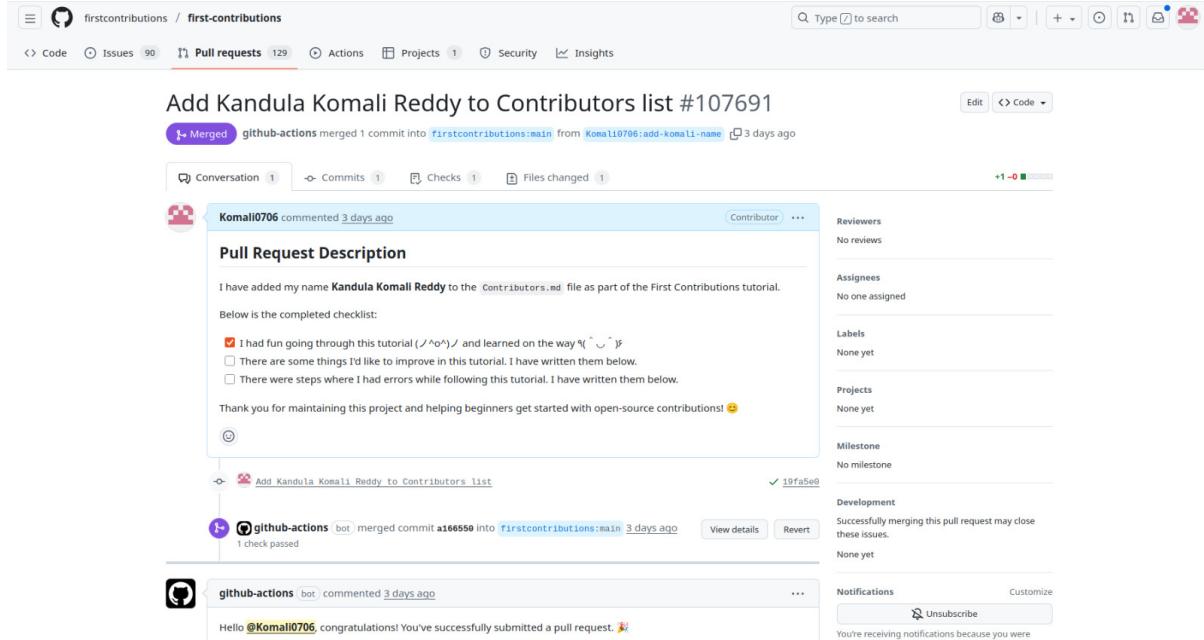
- K.KOMALI – 2400032813
- A.SNEHA LATHA – 2400032254

8 Open-Source Contributions and PR Status

Below are my open-source contributions:

Pull Request 1

Project: first-contributions **Issue:** Add my name to Contributors.md **Status:** Merged
Description: I added my name as part of the beginner tutorial.



The screenshot shows a GitHub pull request page for the 'first-contributions' repository. The pull request has been merged. The description includes a checklist and a thank you message. It shows 1 check passed and was merged by a GitHub Actions bot.

9 LinkedIn Post Links

- Self Hosting Post: https://www.linkedin.com/posts/kandula-komali-9a5b02353_opensource-engineering-selfhosting-activity-7399116358657015808-gmw1?utm_source=social_share_video_v2&utm_medium=android_app&rcm=ACoAAFro0D4BqGFsfqUc0utm_campaign=whatsapp
- PR Merge Post: https://www.linkedin.com/posts/kandula-komali-9a5b02353_opensource-github-firstcontributions-share-7399118145887739905-DkMa?utm_source=social_share_send&utm_medium=android_app&rcm=ACoAAFnDRw0BglYgf1CQdZy1bXnKjutm_campaign=whatsapp
- Blog Post: https://www.linkedin.com/pulse/my-journey-through-linux-self-hosting-oputm_source=share&utm_medium=member_android&utm_campaign=share_via