OPEN SOURCE ENGINEERING

Student ID: 2400032217

Name: B AKSHAYA PRANATHI

B-TECH-Computer Science Engineering

KL University

Mentor: Dr.Sripath Roy Koganti

1 About Linux Distro You Have Used

1.1 1. Overview of the Distribution

The Linux distribution I used for this course is **Ubuntu 24.04.3 LTS**. It is a free, open-source operating system built on the Debian base and maintained by Canonical. Ubuntu is widely known for being stable, secure, and easy to use, which makes it one of the most beginner-friendly Linux distros. Its LTS (Long-Term Support) version ensures reliable updates and long-term stability for everyday tasks and development activities.

1.2 2. Ubuntu's Philosophy and Design

Ubuntu follows the principle **"Linux for human beings,"** focusing on accessibility and user comfort. It is designed to give a smooth experience to first-time users while still being powerful enough for programmers and professionals. Its emphasis on simplicity, security, and usability makes it suitable for learning, productivity, and open-source development.

1.3 3. Desktop Environment (GNOME)

Ubuntu uses the **GNOME** desktop environment, which provides a clean and modern graphical interface. It features:

- A left-side dock for quick access
- An Activities Overview for multitasking
- A simple, distraction-free layout
- Easy window and workspace management

The interface supports efficient navigation and feels similar to other modern operating systems, making it comfortable for new users.

2 Encryption and GPG

2.1 Definition

Encryption is a security technique used to convert readable data into an unreadable or scrambled format. This protects information from unauthorized access. Only a person who has the correct **key** can convert the encrypted data back to its original, readable form. Encryption plays a major role in ensuring:

- **Privacy** – keeping information confidential
- **Security** – protecting sensitive data from hackers
- **Integrity** – preventing unauthorized modifications
- **Safe communication** – especially over the internet

Encryption is widely used in email communication, banking systems, cloud storage, messaging apps, and secure file sharing.

2.2 GPG (GNU Privacy Guard) Explained

GPG is the GNU implementation of the **OpenPGP** standard (originally Pretty Good Privacy - PGP). It is essential for protecting individual files and ensuring secure, authenticated communication.

2.2.1 Core GPG Concepts

GPG relies on **asymmetric cryptography**, which uses a pair of mathematically linked keys:

- **Public Key:** This key is shared with everyone. It can be used to **encrypt** a message that only you can read, or to **verify** a signature you created.
- **Private (Secret) Key:** This key is kept **secret** and is protected by a strong passphrase. It is used to **decrypt** messages sent to you, or to **digitally sign** files to prove they came from you.

2.2.2 Basic GPG Command-Line Usage

GPG is usually pre-installed on Ubuntu and is primarily used through the command line (Terminal).

2.3 Basic GPG Commands (Short and Expanded Version)

A. Generating a Key Pair The first step in using GPG is creating your own key pair. This generates a **public key** (to share with others) and a **private key** (kept secret):

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

You will be asked to choose the key type, key size, your name, email, and a strong passphrase to secure your private key.

B. Encrypting a File (Symmetric Encryption) Symmetric encryption uses a single passphrase to protect your file. It is quick and suitable for personal files:

```
gpg -c myfile.txt
```

This creates an encrypted version called `myfile.txt.gpg`, which can only be opened by entering your passphrase.

C. Encrypting for Someone Else (Asymmetric Encryption) This method is used when sending secure files to another person. You must have their **public key** imported into your system:

```
gpg --encrypt --recipient "email@example.com" file.doc
```

Only the intended recipient, who has the matching private key, can decrypt and open the file.

D. Decrypting a File To open an encrypted file sent to you, use:

```
gpg --decrypt file.doc.gpg
```

GPG will ask for the passphrase of your private key before revealing the original file. You may add `--output` to save the decrypted file to a specific location.

3 Sending Encrypted Email

Sending encrypted email is a secure method of communication that ensures only the intended recipient can read the message. Ubuntu commonly uses **GPG (GNU Privacy Guard)** for this purpose, which relies on public-key cryptography. The sender encrypts the email using the recipient's **public key**, and the recipient decrypts it using their **private key**.

The process involves several steps:

- **Public Key Exchange:** Both users generate a GPG key pair and share their public keys with each other. Public keys are safe to share and can even be uploaded to key servers.
- **Importing the Recipient's Key:** Before sending an encrypted email, the sender must import the recipient's public key into their keyring.
- **Encrypting the Message:** Once the key is imported, the email content or attached file is encrypted using GPG. The encrypted text appears unreadable to anyone without the corresponding private key.
- **Sending the Email:** The encrypted message can be pasted into an email client or sent as an encrypted attachment.
- **Decryption:** The recipient uses their private key to decrypt the email and restore it to its original readable form.

Encrypted email ensures **confidentiality**, **authentication** through digital signatures, and **integrity** of the message. It protects sensitive communication from unauthorized access, interception, and tampering during transmission.

4 Privacy Tools from PRISM-Break

Below are five recommended privacy-focused tools listed on **prism-break.org**. These tools help protect user data, communication, and online activity.

4.1 Tor Browser

Tor Browser allows anonymous web browsing by routing internet traffic through multiple encrypted nodes. It hides the user's IP address and prevents websites or trackers from monitoring activity.

4.2 KeePassXC

KeePassXC is a secure, open-source password manager that stores all passwords in an encrypted local database. It avoids cloud storage and ensures complete control over sensitive credentials.

4.3 Signal

Signal is an end-to-end encrypted messaging application used for private chats, voice calls, and video calls. It does not store metadata and prioritizes user privacy.

4.4 Syncthing

Syncthing is a peer-to-peer file synchronization tool that allows devices to share files directly without using third-party cloud servers. All transfers are encrypted and decentralized.

4.5 ProtonMail

ProtonMail is an encrypted email service based in Switzerland. It provides end-to-end encryption, meaning even the service provider cannot read user emails.

5 About the Open Source Licence Used for the Mealie Server

The **Mealie** server is released under the **GNU Affero General Public License v3.0 (AGPL-3.0)**. This is a strong copyleft licence designed to ensure that software and any modifications made to it remain open-source, even when the software is used over a network.

Key Points of the AGPL-3.0 Licence

- It is a **strong copyleft licence**, meaning that if you modify or host the software and make it accessible over a network, you must release your modified version under the same AGPL-3.0 licence.
- The licence ensures that improvements, fixes, or modifications remain open and freely available to the community.
- For self-hosted applications like Mealie, the AGPL-3.0 protects user freedoms by requiring that network-accessible versions also share their source code.

Implications for the Mealie Instance Used

- Since Mealie is licensed under AGPL-3.0, any modifications made to the Mealie source code—and made available to others over a network—must also be released under the AGPL-3.0 licence.
- If you deploy Mealie *without modifying* the source code, you are free to run, host, and use the server without any further obligations, aside from preserving the original licence notices.
- The licence permits using, installing, hosting, and distributing the software, but when it is made available as a service over a network, the AGPL's copyleft requirements ensure that user freedoms are maintained.

6 Self-Hosted Server: About, Installation, and Localized Documentation

6.1 About the Self-Hosted Server (Mealie)

The self-hosted server used in this project is **Mealie**, an open-source recipe manager and meal-planning application. Mealie allows users to store, organize, and manage recipes on their own server instead of relying on third-party cloud platforms. As a self-hosted solution, it offers:

- **Full control** over data and privacy.
- **Customization** based on user requirements.
- **No dependency** on external services.
- **Flexibility** to run on local machines, VPS, or Docker environments.

Mealie provides a modern web interface for meal planning, recipe storage, and user management, making it a convenient tool for personal and family use.

6.2 Installation Steps of Mealie (Summarized)

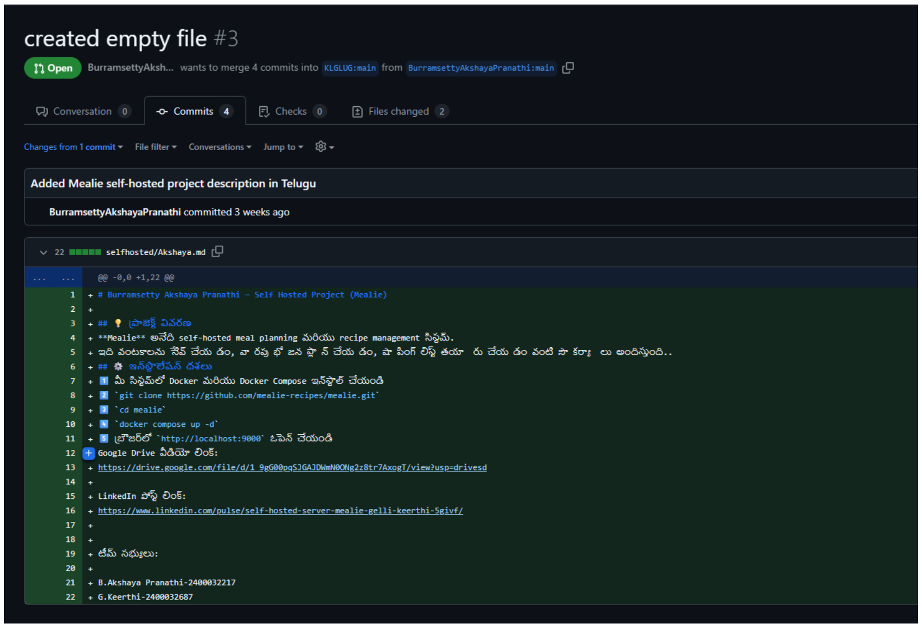
1. Install Docker and Docker Compose on the Ubuntu server.
2. Create a directory to store the Mealie configuration files.
3. Inside the directory, create a `docker-compose.yml` file containing the Mealie container configuration.
4. Start the Mealie container using the command:

   ```
   docker compose up -d
   ```

5. After installation, open a web browser and access Mealie using the server's IP address or domain name.
6. Create an admin account and begin adding or importing recipes.

6.3 Localized (Translated) Document

As part of this project, I created a **localized (translated)** version of the Mealie documentation. Localization allows users to understand the setup process in their own language, making the software more accessible.



created empty file #3

Open BurramsettyAksh... wants to merge 4 commits into `KLGLUG:main` from `BurramsettyAkshayaPranathi:main`

Conversation 0 | Commits 4 | Checks 0 | Files changed 2

Changes from 1 commit ▾ File filter ▾ Conversations ▾ Jump to ▾

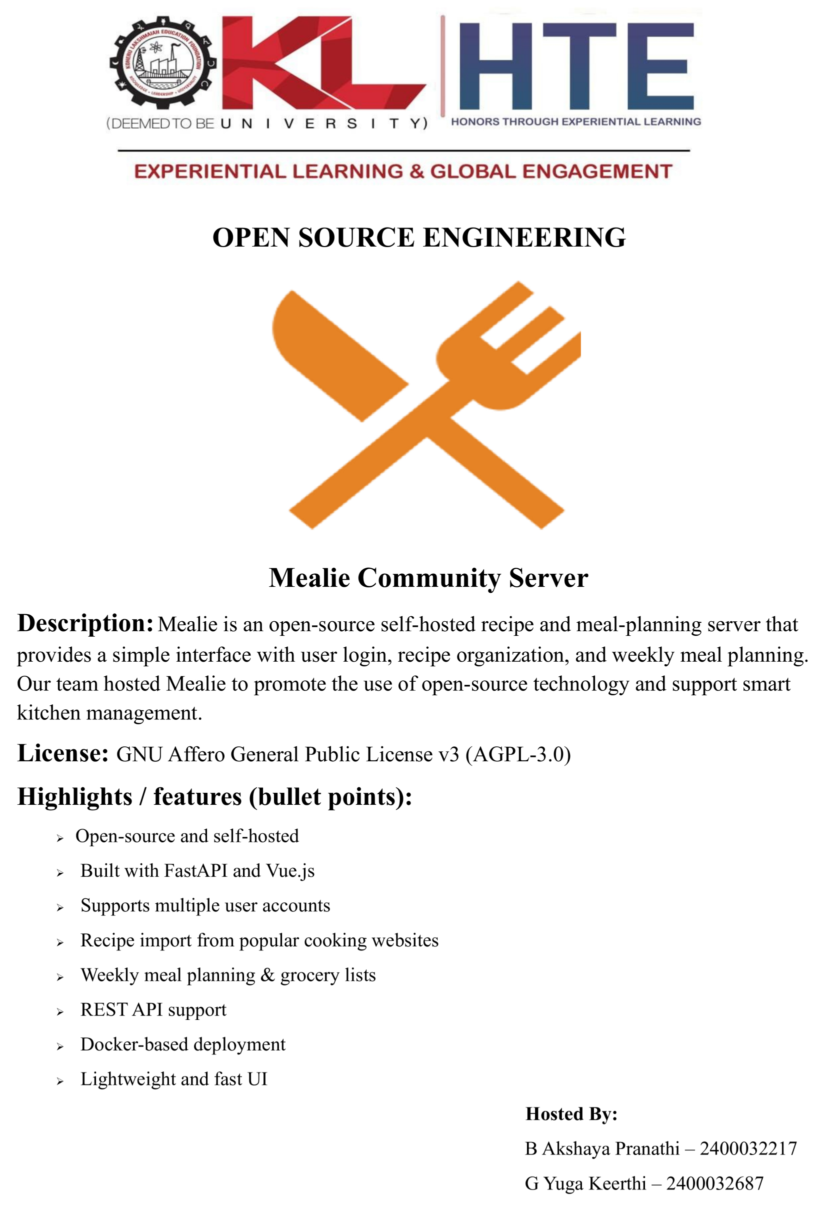
Added Mealie self-hosted project description in Telugu

BurramsettyAkshayaPranathi committed 3 weeks ago

22 selfhosted/Akshaya.md

```
@@ -0,0 +1,22 @@
+ # Burramsetty Akshaya Pranathi – Self Hosted Project (Mealie)
+
+ ## 💡 ప్రాజెక్ట్ వివరణ
+ **Mealie** అనేది self-hosted meal planning మరియు recipe management సిస్టమ్.
+ ఇది వంటకాలను సేవ్ చేయ డం, వా రపు భో జన ప్లా న్ చేయ డం, షా పింగ్ లిస్ట్ తయా  రు చేయ డం వంటి సౌ కర్యా  లు అందిస్తుంది..
+ ## ⚙ ఇన్‌స్టాలేషన్ దశలు
+ 1️⃣ మీ సిస్టమ్‌లో Docker మరియు Docker Compose ఇన్‌స్టాల్ చేయండి
+ 2️⃣ `git clone https://github.com/mealie-recipes/mealie.git`
+ 3️⃣ `cd mealie`
+ 4️⃣ `docker compose up -d`
+ 5️⃣ బ్రౌజర్‌లో `http://localhost:9000` ఓపెన్ చేయండి
+ Google Drive వీడియో లింక్:
+ https://drive.google.com/file/d/1_9gG00pqSJGAJDWmN0ONg2z8tr7AxogT/view?usp=drivesd
+
+ LinkedIn పోస్ట్ లింక్:
+ https://www.linkedin.com/pulse/self-hosted-server-mealie-gelli-keerthi-5givf/
+
+
+ టీమ్ సభ్యులు:
+
+ B.Akshaya Pranathi-2400032217
+ G.Keerthi-2400032687
```

6.4 Poster



KL (DEEMED TO BE UNIVERSITY) | HTE HONORS THROUGH EXPERIENTIAL LEARNING

EXPERIENTIAL LEARNING & GLOBAL ENGAGEMENT

OPEN SOURCE ENGINEERING

Mealie Community Server

Description: Mealie is an open-source self-hosted recipe and meal-planning server that provides a simple interface with user login, recipe organization, and weekly meal planning. Our team hosted Mealie to promote the use of open-source technology and support smart kitchen management.

License: GNU Affero General Public License v3 (AGPL-3.0)

Highlights / features (bullet points):

- Open-source and self-hosted
- Built with FastAPI and Vue.js
- Supports multiple user accounts
- Recipe import from popular cooking websites
- Weekly meal planning & grocery lists
- REST API support
- Docker-based deployment
- Lightweight and fast UI

Hosted By:

B Akshaya Pranathi – 2400032217

G Yuga Keerthi – 2400032687

7 Open Source Contribution

Contribution #1 – PR 106561

Repository & Pull Request Repository: `firstcontributions/first-contributions`
Pull Request: `https://github.com/firstcontributions/first-contributions/pull/106561`

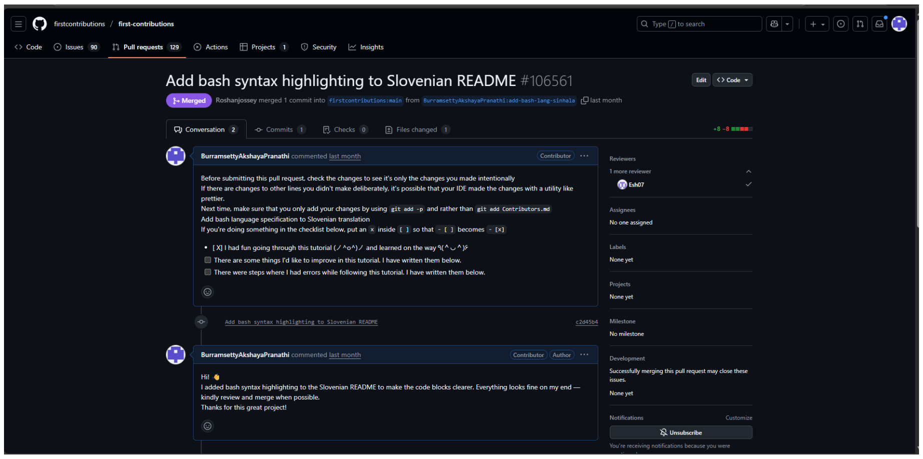
Issue Description Added my name to the contributors list in the repository.

Changes Made

- Forked the repository and created a new branch.
- Added myself to `Contributors.md`.
- Committed the changes and opened the pull request for review.

Status Merged.

Screenshot



Add bash syntax highlighting to Slovenian README #106561

Roshanjossey merged 1 commit into `firstcontributions:main` from `BurramsettyAkshayaPranathi:add-bash-lang-sinhala` last month

BurramsettyAkshayaPranathi commented last month

Before submitting this pull request, check the changes to see it's only the changes you made intentionally
If there are changes to other lines you didn't make deliberately, it's possible that your IDE made the changes with a utility like prettier.
Next time, make sure that you only add your changes by using `git add -p` and rather than `git add Contributors.md`
Add bash language specification to Slovenian translation
If you're doing something in the checklist below, put an `x` inside `[ ]` so that `- [ ]` becomes `- [x]`

- [X] I had fun going through this tutorial (／^o^)／ and learned on the way ٩(^◡^)۶
- [ ] There are some things I'd like to improve in this tutorial. I have written them below.
- [ ] There were steps where I had errors while following this tutorial. I have written them below.

`Add bash syntax highlighting to Slovenian README` c2d45b4

BurramsettyAkshayaPranathi commented last month

Hi! 👋
I added bash syntax highlighting to the Slovenian README to make the code blocks clearer. Everything looks fine on my end — kindly review and merge when possible.
Thanks for this great project!

Reviewers
1 more reviewer
Esh07 ✓

Assignees
No one assigned

Labels
None yet

Projects
None yet

Milestone
No milestone

Development
Successfully merging this pull request may close these issues.
None yet

Notifications
You're receiving notifications because you were

Contribution #2 – PR 6274 to `rsyslog/rsyslog`

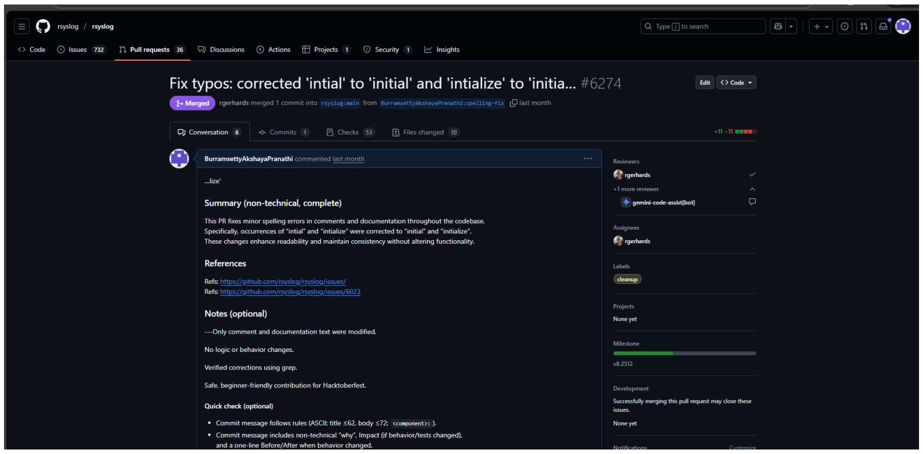
Repository & Pull Request Repository: `rsyslog/rsyslog`
Pull Request: `https://github.com/rsyslog/rsyslog/pull/6274`

Issue Description The issue involved multiple spelling mistakes in comments and documentation across the rsyslog codebase. Specifically, words like "intial" and "intialize" appeared in various files instead of their correct forms.

Changes Made

- Fixed all occurrences of “intial” → “initial”.
- Corrected all occurrences of “intialize” → “initialize”.
- Updated comments and documentation text only — no code or logic modifications were made.
- Verified corrections using search tools to ensure completeness.

Status **Merged** — The pull request was reviewed, approved, and merged into the main branch. The maintainer acknowledged the contribution and confirmed that it passed all required checks.

Screenshot 

Fix typos: corrected 'intial' to 'initial' and 'intialize' to 'initia... #6274

Merged rgerhards merged 1 commit into rsyslog:main from BurramsettyAkshayaPranathi:spelling-fix last month

BurramsettyAkshayaPranathi commented last month

...lize'

Summary (non-technical, complete)

This PR fixes minor spelling errors in comments and documentation throughout the codebase.
Specifically, occurrences of “intial” and “intialize” were corrected to “initial” and “initialize”.
These changes enhance readability and maintain consistency without altering functionality.

References

Refs: https://github.com/rsyslog/rsyslog/issues/
Refs: https://github.com/rsyslog/rsyslog/issues/6023

Notes (optional)

---Only comment and documentation text were modified.

No logic or behavior changes.

Verified corrections using grep.

Safe, beginner-friendly contribution for Hacktoberfest.

Quick check (optional)

- Commit message follows rules (ASCII; title ≤62, body ≤72; `<component>:`).
- Commit message includes non-technical “why”, Impact (if behavior/tests changed), and a one-line Before/After when behavior changed.

Reviewers
rgerhards ✓
+1 more reviewer
gemini-code-assist[bot]

Assignees
rgerhards

Labels
cleanup

Projects
None yet

Milestone
v8.2512

Development
Successfully merging this pull request may close these issues.
None yet

Notifications Customize

Contribution #3 – PR 23735 to `zero-to-mastery/start-here-guidelines`

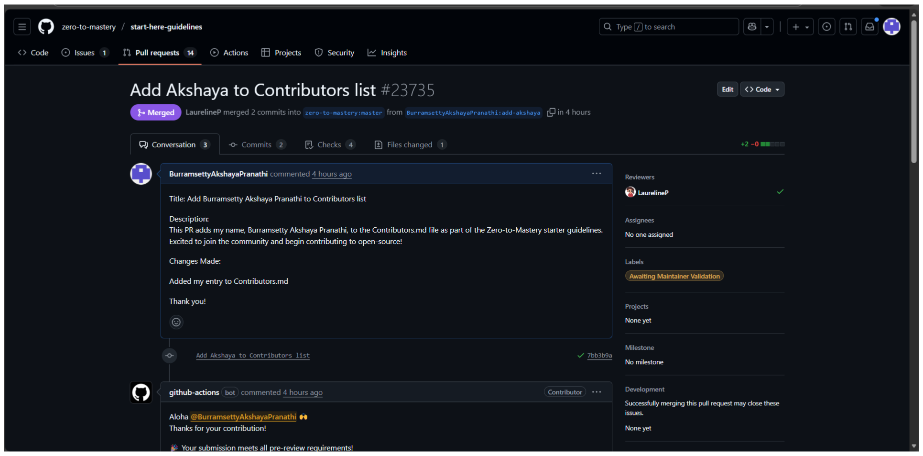
Repository & Pull Request Repository: `zero-to-mastery/start-here-guidelines`
Pull Request: `https://github.com/zero-to-mastery/start-here-guidelines/pull/23735`

Issue Description This contribution involved adding my name, **Burramsetty Akshaya Pranathi**, to the project’s `Contributors.md` file as part of the Zero-to-Mastery beginner-friendly onboarding process.

Changes Made

- Added my entry to the `Contributors.md` file.
- Followed the repository workflow by creating a separate branch and submitting a PR.
- Ensured the formatting followed the project’s contributor list structure.

Status **Merged** — The pull request was reviewed, approved, and merged into the main branch by the maintainer `LaurelineP`. The GitHub Actions bot also verified the submission.

Screenshot 

zero-to-mastery / start-here-guidelines

Add Akshaya to Contributors list #23735

Merged LaurelineP merged 2 commits into `zero-to-mastery:master` from `BurramsettyAkshayaPranathi:add-akshaya` in 4 hours

BurramsettyAkshayaPranathi commented 4 hours ago

Title: Add Burramsetty Akshaya Pranathi to Contributors list

Description:
This PR adds my name, Burramsetty Akshaya Pranathi, to the Contributors.md file as part of the Zero-to-Mastery starter guidelines.
Excited to join the community and begin contributing to open-source!

Changes Made:

Added my entry to Contributors.md

Thank you!

`Add Akshaya to Contributors list` 7bb3b9a

github-actions bot commented 4 hours ago

Aloha @BurramsettyAkshayaPranathi
Thanks for your contribution!

Your submission meets all pre-review requirements!

Reviewers: LaurelineP
Assignees: No one assigned
Labels: Awaiting Maintainer Validation
Projects: None yet
Milestone: No milestone
Development: Successfully merging this pull request may close these issues. None yet

Contribution #4 – PR 997 to `obsidianmd/obsidian-help`

Repository & Pull Request Repository: `obsidianmd/obsidian-help`
Pull Request: `https://github.com/obsidianmd/obsidian-help/pull/997`

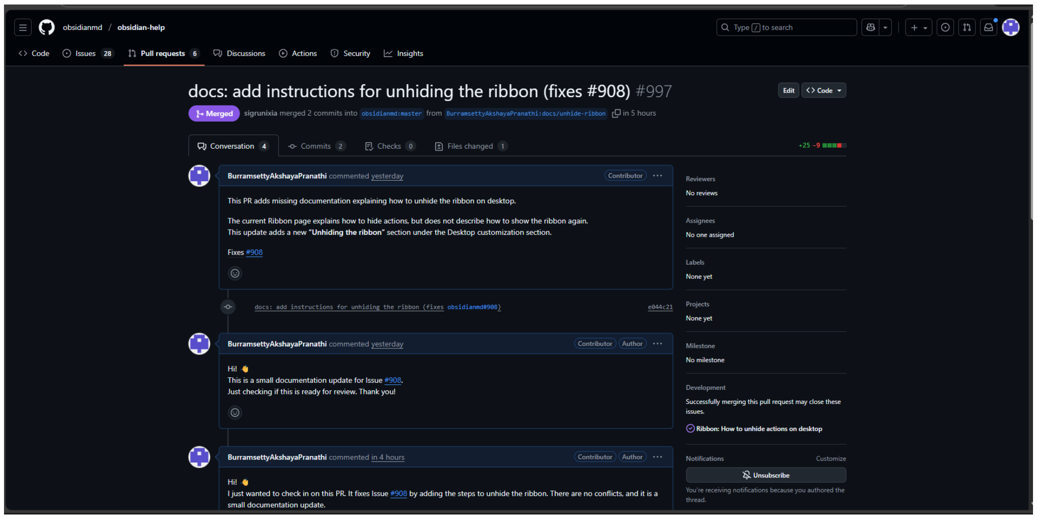
Issue Description This pull request was created to fix Issue #908, which reported missing documentation on how to **unhide the ribbon** in the Obsidian desktop application. The existing Ribbon documentation explained how to hide actions but did not describe how users can bring the ribbon back after hiding it.

Changes Made

- Added a new subsection titled *"Unhiding the ribbon"* under the Desktop Customization section.
- Provided clear step-by-step instructions for showing the ribbon again on desktop.
- Improved clarity and consistency with the existing style of documentation.
- Followed the repository's contribution workflow using a separate branch: `docs/unhide-ribbon`.

Status **Merged** — The pull request was reviewed and merged by the maintainer `sigrunixia`. The maintainer also aligned the content with the updated style guide before merging. The PR was successfully merged into the `master` branch.

Screenshot



obsidianmd / obsidian-help

docs: add instructions for unhiding the ribbon (fixes #908) #997

Merged sigrunixia merged 2 commits into `obsidianmd:master` from `BurramsettyAkshayaPranathi:docs/unhide-ribbon` in 5 hours

Conversation 4 · Commits 2 · Checks 0 · Files changed 1 · +25 −9

BurramsettyAkshayaPranathi commented yesterday — Contributor

This PR adds missing documentation explaining how to unhide the ribbon on desktop.

The current Ribbon page explains how to hide actions, but does not describe how to show the ribbon again.
This update adds a new **"Unhiding the ribbon"** section under the Desktop customization section.

Fixes #908

`docs: add instructions for unhiding the ribbon (fixes obsidianmd#908)` e044c21

BurramsettyAkshayaPranathi commented yesterday — Contributor, Author

Hi! 👋
This is a small documentation update for Issue #908.
Just checking if this is ready for review. Thank you!

BurramsettyAkshayaPranathi commented in 4 hours — Contributor, Author

Hi! 👋
I just wanted to check in on this PR. It fixes Issue #908 by adding the steps to unhide the ribbon. There are no conflicts, and it is a small documentation update.

Reviewers: No reviews
Assignees: No one assigned
Labels: None yet
Projects: None yet
Milestone: No milestone
Development: Successfully merging this pull request may close these issues.
Ribbon: How to unhide actions on desktop
Notifications: You're receiving notifications because you authored the thread.

Contribution #5 – PR 124 to `KLGLUG/Y24OpenSourceEngineering`

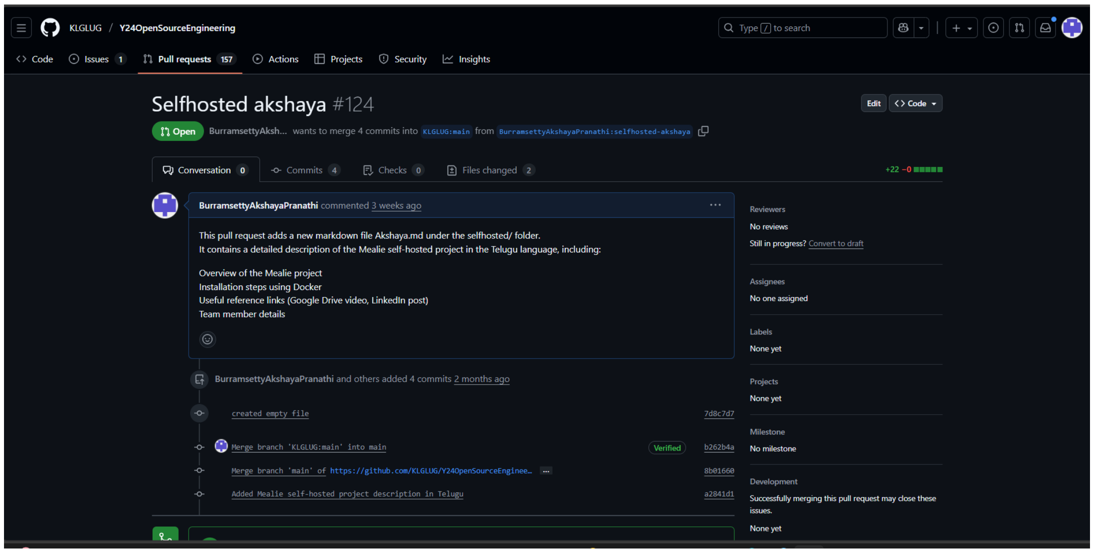
Repository & Pull Request Repository: `KLGLUG/Y24OpenSourceEngineering`
Pull Request: `https://github.com/KLGLUG/Y24OpenSourceEngineering/pull/124`

Issue Description This pull request adds a new markdown file `Akshaya.md` under the `selfhosted/` folder. The file contains a detailed description of the Mealie self-hosted project written in the Telugu language. The documentation helps students understand the project setup in their native language.

Changes Made

- Created a new markdown file `Akshaya.md`.
- Added an overview of the Mealie self-hosted server.
- Documented the complete Docker installation steps.
- Added useful reference links (Google Drive video, LinkedIn post).
- Included team member details as part of the documentation.

Status **Open** — The pull request is active and can be merged. GitHub reports: *"No conflicts with the base branch. Changes can be cleanly merged."*

Screenshot 

Selfhosted akshaya #124

Open BurramsettyAksh... wants to merge 4 commits into `KLGLUG:main` from `BurramsettyAkshayaPranathi:selfhosted-akshaya`

BurramsettyAkshayaPranathi commented 3 weeks ago

This pull request adds a new markdown file Akshaya.md under the selfhosted/ folder.
It contains a detailed description of the Mealie self-hosted project in the Telugu language, including:

Overview of the Mealie project
Installation steps using Docker
Useful reference links (Google Drive video, LinkedIn post)
Team member details

BurramsettyAkshayaPranathi and others added 4 commits 2 months ago

```
created empty file                                                          7d8c7d7
Merge branch 'KLGLUG:main' into main                              Verified  b262b4a
Merge branch 'main' of https://github.com/KLGLUG/Y24OpenSourceEnginee… …     8b01660
Added Mealie self-hosted project description in Telugu                      a2841d1
```

Reviewers
No reviews
Still in progress? Convert to draft

Assignees
No one assigned

Labels
None yet

Projects
None yet

Milestone
No milestone

Development
Successfully merging this pull request may close these issues.
None yet

8 Linkedin Post Links

8.1 PR :

https://www.linkedin.com/posts/akshaya-burramsetty-a81163339_merged-prs-from-my-open-source-journey
utm_source=share&utm_medium=member_desktop&rcm=ACoAAFTrHEEBoIpL86A9u98ANWvgJzRRF_INaos

8.2 Journey Of Open Source :

https://www.linkedin.com/posts/akshaya-burramsetty-a81163339_about-my-first-open-source-journey-act
utm_source=share&utm_medium=member_desktop&rcm=ACoAAFTrHEEBoIpL86A9u98ANWvgJzRRF_INaos

8.3 Self Hosted Project :

https://www.linkedin.com/posts/akshaya-burramsetty-a81163339_activity-7399011662877597697-Ittb?
utm_source=share&utm_medium=member_desktop&rcm=ACoAAFTrHEEBoIpL86A9u98ANWvgJzRRF_INaos