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Department of Computer Science and Engineering

19CSE314 – Open Source Software

Reporting Issues and Contributing Code in Open source software

Contributing to open-source software is a great way to help improve the project, and reporting issues or contributing code is key to this process. Here's a general guide on how you can report issues and contribute code to open-source projects:

When you encounter a bug or have a suggestion for improvement, reporting it clearly and effectively is essential for developers to address it.

Steps to Report Issues:

1. **Check Existing Issues:** Before opening a new issue, search the project's issue tracker (e.g., GitHub Issues) to see if the problem or feature request has already been reported. This helps avoid duplicate issues.
2. **Provide a Clear Title:** Choose a concise, descriptive title for the issue. For example, instead of "Bug," use something like "App crashes when uploading images."
3. **Describe the Issue in Detail:**
 - **What is happening?** Describe the unexpected behavior or bug you're experiencing.
 - **Steps to Reproduce:** List the steps that someone would follow to reproduce the issue.
 - **Expected vs. Actual Behavior:** Explain what you expected to happen versus what actually occurred.
 - **Environment Details:** Provide details about the system you're using (e.g., OS version, browser version, app version, etc.).
 - **Error Logs or Screenshots:** If applicable, provide error messages, logs, or screenshots that show the problem. This can be extremely helpful for developers.
4. **Be Respectful and Constructive:** Be polite, respectful, and focus on providing helpful information to make it easier for maintainers to fix the issue.

Example Issue Report:

Title: App crashes when uploading an image

Description: The app crashes when I try to upload an image from my gallery. It happens every time I attempt to upload a file.

Steps to Reproduce:

1. Open the app.
2. Navigate to the "Upload" section.
3. Select any image from the gallery and press "Upload."
4. The app crashes immediately.

Expected Behavior: The app should successfully upload the image without crashing.

Actual Behavior: The app crashes every time I try to upload an image.

Environment:

- OS: Android 10
- App version: 1.2.3
- Device: Samsung Galaxy S10

Additional Information:

- No error message is displayed, the app just closes abruptly.

2. Contributing Code

Contributing code to an open-source project involves fixing bugs, adding new features, or improving the documentation. Here's how you can get started:

Steps to Contribute Code:

1. Fork the Repository:

- Go to the project's GitHub (or another platform) repository and click the "Fork" button to create a copy of the repository under your own account. This lets you make changes without affecting the original project.

2. Clone Your Fork:

- Clone your forked repository to your local machine:

```
git clone https://github.com/your-username/project-name.git
```

3. Create a New Branch:

- It's best practice to create a new branch for each feature or bug fix to keep things organized:

```
git checkout -b feature/your-feature-name
```

4. Make Changes:

- Make your code changes locally. Be sure to test your changes and ensure that the project still works as expected after the modification.
- Ensure your code follows the project's style guide (if available), and include any necessary comments and documentation.

5. Commit Your Changes:

- Commit your changes with a clear, concise message describing what you did:

```
git add .  
git commit -m "Fixes issue with image upload crash"
```

6. Push Your Changes:

- Push the changes back to your fork:

```
git push origin feature/your-feature-name
```

7. Create a Pull Request:

- Go to the original repository's page and click the "New Pull Request" button.
- Compare your fork's branch with the original project's branch (usually main or master).
- Provide a clear description of the changes you've made and why they are needed.

8. Address Feedback:

- Project maintainers may leave comments or request changes. Respond to feedback by making adjustments and pushing the changes to your branch.
- Once your changes are accepted, they will be merged into the main project.

Example of a Commit Message:

`git commit -m "Fixed crash on image upload by checking for null values"`

Important Guidelines for Contributing Code:

- **Understand the Project:** Take time to read the project documentation to understand the codebase and guidelines.
- **Test Before You Commit:** Run tests to ensure your changes don't break anything.
- **Follow Coding Standards:** Stick to the project's coding conventions and style guide.
- **Write Tests:** If applicable, write unit or integration tests to cover the new changes you've made.
- **Stay in Sync:** Before submitting a pull request, ensure your branch is up to date with the base branch (usually main or master):

```
git fetch upstream
git checkout main
git merge upstream/main
```

By following these steps, we can contribute to the project in an organized and productive way.

Tools for Collaboration:

- **GitHub Issues:** For reporting bugs and feature requests.
- **GitHub Pull Requests:** For submitting code contributions.
- **Linters and Code Formatters:** Make sure your code adheres to the project's coding standards.