

Contributing to FOSS: A Case Study

Harshula Jayasuriya
<harshula at gmail dot com>

What is considered a contribution?

- Doing QA and providing feedback
- Helping newbies
- Packaging program X for Distro Y
- Providing patches for bugs
- Creating and developing a new project

Why contribute?

- Scratching an itch
 - You may be using a FOSS application that has a bug you need fixed
- Making a living
 - You may be employed by a company producing FOSS
- Altruistic
 - You may feel you need to give something back to FOSS (a different type of itch?)

FOSS reality

- Standards
- Project maintainers
- Forked projects
- Tools
- Patch process
- Distribution

Observing standards

- The FOSS community are ardent followers of standards
- Without standards, there would be anarchy in the FOSS world
 - Many projects and project maintainers
- Research the standards to support your patch

Amending standards

- If there's an error in a standard, get it amended
- Don't even bother trying to convince the project maintainer otherwise
 - The project maintainer's job is to follow the standards
- Example: ISO639

Project Maintainers

- A good project maintainer will look for advice
 - Can't always know the latest standards
 - If you have shown knowledge in a particular area, chances are the project maintainer will find you to be a useful resource
- Once a relationship is developed
 - Easier for you and the maintainer to understand each other
 - Patches get committed sooner with less questions
 - Examples

Project Maintainers (cont.)

- Project maintainers do talk to each other
 - This is very true when the projects are related or similar
- There are many ways to annoy project maintainers
 - Ask questions that have been answered in the FAQ
 - Requesting features but not testing the feature when it is completed
 - Criticising constantly without contributing

Contributing to forked projects

- Don't try to guess which project is going to 'win'
 - Submit patches to all relevant projects
- Also keep an eye on any sub-projects
 - Particularly if they appear to have the official blessing for redesigning or modularising the code.
- Examples

Tools

- Source Control (CVS)
- Bug Tracker (Bugzilla)
- Editor (vim)
- Patch Creator (diff)
- Graphical Diffing Program (xxdiff)

Patch Process

- Understand the issue/bug
- Create a patch
 - Test the patch extensively
 - Request a peer to review/test the patch
- Submit the patch and test files to the project's bug reporting system and/or maintainer
 - May have to justify the patch
- Test CVS checkout

Getting a patch into distros

- Submit upstream to project maintainers
- Encourage vendors to apply backported patches
- Create packages for the short term

Case study: Unicode Sinhala / SLS1134

- Phonetic encoding system
 - Unicode Sinhala codepage
 - <http://www.unicode.org/charts/PDF/U0D80.pdf>
 - South and Southeast Asian scripts (Unicode Chapter 9)
 - <http://www.unicode.org/book/ch09.pdf>

Unicode Sinhala (cont.)

- Independent vowels
 - We first have all the independent vowel sounds: අ (a), ආ (aa), ඇ (ae), ඈ (aee), ඉ (i), ඊ (ii), උ (u), ඌ (uu), එ (e), ඒ (ee), ඔ (o), ඖ (oo), ටෙ (ai), ඩො (au), etc.

Unicode Sinhala (cont.)

- 'Consonants'
 - Then we have all the consonant plus 'a' sounds: ක (ka), ක් (kha), ග (ga), ග් (gha), etc.

Unicode Sinhala (cont.)

- Dependent vowels (vowel modifiers)
 - Then we have all the dependent vowel sounds (in this example combined with ක (ka)): ක්, කා, කැ, කෑ, කී, කී, කු, කු, කෙ, කේ, කො, කෝ, කෛ, කෝ

Unicode Sinhala (cont.)

- Codepoints
 - Each of these sounds, all the independent vowels, 'consonants' and dependent vowels are given a unique codepoint.
- Example
 - The කො (ko) sound ((kombuva)(kayanna)(aelapilla)) is represented in Unicode Sinhala as two codepoints, the 'consonant' ක (ka) and the dependent vowel ට ො(o).

Example of an itch

- Adding Unicode Sinhala to the GNU/Linux renderers
 - Pango (GTK), ICU (Open Office), QT
 - 3 separate maintainers
- What is a renderer
 - Required for Complex Text Layout (South Asian scripts)

Example of a scratch

- 3 patches for Pango
 - Enable Sinhala
 - To allow essential rendering, including reordering vowel modifiers
 - http://bugzilla.gnome.org/show_bug.cgi?id=153517
 - Fix bug
 - Don't implicitly create conjuncts
 - http://bugzilla.gnome.org/show_bug.cgi?id=161981
 - Add feature
 - Enable touching letters in Sinhala rendering
 - http://bugzilla.gnome.org/show_bug.cgi?id=302577

Example of a scratch (cont.)

- Additional requirements
 - Provide a Unicode font to the project maintainer for testing
 - Provide test cases and images of the rendering before and after the patch
 - Provide supporting material

Conclusion

- Contributions to FOSS are often users satisfying their own needs
- First learn about the project and the related standards
- Depending on the project, there may be well defined procedures for those wanting to contribute
- Happy Contributing ...