L01 Issue Tracking

Markus Raab

Institute of Information Systems Engineering, TU Wien

Issue Tracking

1. Issue Tracking
2. Bug Reporting
3. Bug Triage
4. Meeting
    - Organisation
    - Recapitulation
    - Assignments
    - Preview

Learning Outcomes

After successful completion of L01 and H1
students will be able to

- remember terms and characteristics of issue tracking systems,
- report bugs,
- triage bugs.

Term: Issue

“Issue” is a very general term, it means nearly anything:

- a problem or bug
- a proposal
- a question
- a feature request
- a task
- a TODO list entry
- . . .

Issue Tracking

Allows to:

- track the latest status of issues: open, resolved, . . .
- discuss the issue (`@mention`)
- add semantics (metadata): tags, project, milestone, relationships, priorities, . . .

Queries

Based on full text and/or semantic queries, issues on `https://issues.libelektra.org`:

- I created:
  `is:open is:issue author:@me`
- I am assigned to:
  `is:open is:issue assignee:@me`
- without assignee:
  `is:open is:issue no:assignee`
- not updated this year:
  `is:open is:issue updated:<2022`
- that have a label:
  `is:open is:issue label:floss2022W`
- to be fixed before 1.0:
  `is:open is:issue milestone:0.9.*`

Issue Tracking Systems

- text files with metadata in git
- conversationally-rich: Debbugs, GitLab or GitHub issues
- semantically-rich: e.g. Bugzilla
- broader scope: Redmine, Trac
- specialization: misconfiguration tracker

Unsuitable “Issue Tracking Systems”

- EMail
- Forums
- chats like IRC
- text files
- TODO markers
- . . .

if without metadata or not in version control.

Interfaces

- Web
- EMail
- REST
- CLI tools, e.g. reportbug
- . . .

Elektra has

- TODO files in doc/todo (12 files)
- TODO markers in source code (263 markers)
- `https://issues.libelektra.org` (217 open issues)

Automatic Closing of Issues

Ideally only fixed bugs would be closed but:

- issues become irrelevant
- maintainers disappear
- systems depreciate
- focus shifts
- . . .

In Elektra issues+PR close after 365+14 days automatically, see `.github/stale.yml`.

The 249 issues still can be found via `is:closed is:issue label:stale`

Netiquette

- Never forget that you are talking to human beings.
- Be as careful, respectful and gentle as possible.
- Expect as little as possible.
- Only judge on technical issues, never on persons.
- There are no golden rules, cultures can disagree on everything.

Task

Do you agree with that list? Discuss your experiences.

Quoting

- If you want to reply to several points:

```
@ghost wrote:
> I wrote something
The answer
```

- If you reply to a statement given somewhere else:

```
@ghost wrote in [link to comment]:
> I wrote something
The answer
```

- Often no reply necessary if you only want to (dis)agree.

Best Practices

- First read attentively, then write.
- If in doubt: start a new issue.
- Split up issues that discuss unrelated problems.
- Prefer methods of automatic closing of issues.
- Fix issues you are assigned, ask for help or unassign if you give up.

L01 Issue Tracking

Markus Raab

Institute of Information Systems Engineering, TU Wien

Bug Reporting

1. Issue Tracking
2. Bug Reporting
3. Bug Triage
4. Meeting
   - Organisation
   - Recapitulation
   - Assignments
   - Preview

First Steps in Bug Reports

Make sure that:

- You use the correct issue tracker.
- You read about how to use that issue tracker.
- Use specialized helper programs, if available, like reportbug.

Steps to Reproduce the Problem

- be precise
- be clear
- be complete
- ideally syntax of tests

→ verify yourself

Actual Result

- describe the symptoms
- avoid opinions or conclusions here
- describe what you see

Expected Result

- how you would like the software to behave
- suggestions how to solve the problem

System Information

- version or sha of commit
- include errors, logs, etc.
- operating system or docker container
- versions of other relevant software

Best Practices

- learn about the community in guidelines
- always include symptoms, separate diagnosis
- reproduce using your own report
- sometimes an incomplete report can be better than no report
- reply to further questions

L01 Issue Tracking

Markus Raab

Institute of Information Systems Engineering, TU Wien

Bug Triage

1. Issue Tracking
2. Bug Reporting
3. Bug Triage
4. Meeting
   - Organisation
   - Recapitulation
   - Assignments
   - Preview

Reproduce the Problem

Try to do what is described in the issue, possible problems:

- There is an error in the description, e.g. a wrong command.
- The description is missing essential steps to do.
- The issue is already fixed or otherwise outdated.

→ Fix such problems in the issue description!

Locate Problem in Source Code

- Via error messages: `kdb -vd`
- Via debugger or backtrace:
  - Additionally install `-dbgsym` packages.
  - Even better compile with: `ENABLE_DEBUG`.
- Via logger:
  - Compile with `ENABLE_LOGGER`.
  - Modify `src/libs/elektra/log.c` as needed.

System Information

Hints about further affected systems, e.g.,

- information about your system
- version information
- programming language

might further triage the bug, i.e., help the person working on it.

Best Practices

Bug triage

- makes fixing bugs easier.
- can help to find the right person to fix a task.
- is needed for imprecise unclear or incomplete issues
  → avoid this in the first place

L01 Issue Tracking

Markus Raab

Institute of Information Systems Engineering, TU Wien

Meeting

1. Issue Tracking
2. Bug Reporting
3. Bug Triage
4. Meeting
   - Organisation
   - Recapitulation
   - Assignments
   - Preview

BigBlueButton

Task

Rename to “@GitHubName Real Name”
Real Name in the order as you want to be called.

- raise the hand immediately on any issues
- on technical problems write in chat what happened and then try another browser, e.g., recent Firefox or Chromium

Language during the meetings?

Task

A English

B Slightly Prefer English

C Both are fine

D Slightly Prefer German

E German

Video

I am trying to keep meetings short with many breaks.
You are allowed to:

- stretch
- move
- eat
- look somewhere else
- leave your place

Task

But please turn video on.

Inverted Classroom

Task

Did you watch the videos of L01?

A Fully

B Most

C Partly

D No

Information Flow

Task

- please mark materials in TUWEL that you read/watched as “Erledigt”
- configure TUWEL that you receive replies in discussions
- configure GitHub that you receive information on @mention

course vs. real-world FLOSS

Task

- deadlines
- not all information open (TUWEL)
- teams

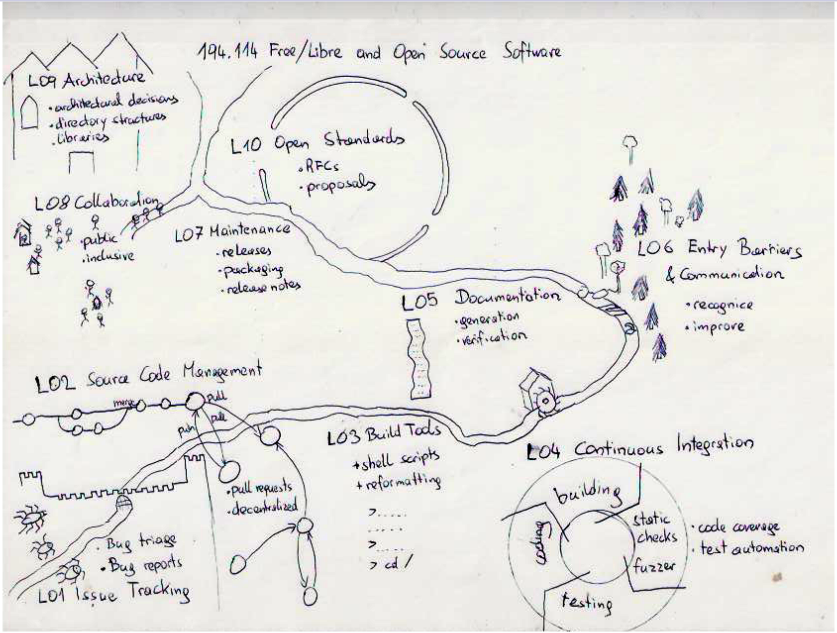
FLOSS

Free/libre and Open Source Software allows you to:

0. Use
1. Share
2. Study
3. Improve

the software (binary and source) for any purpose without restrictions.

Recapitulation



In pairs, discuss:

- important topics
- missing topics
- implications

Learning Outcomes

After successful completion of L01 and H1
students will be able to

- remember terms and characteristics of issue tracking systems,
- report bugs,
- triage bugs.

Term: Issue

"Issue" is a very general term, it means nearly anything:

- a problem or bug
- a proposal
- a question
- a feature request
- a task
- a TODO list entry
- . . .

Issue Tracking

Allows to:

- track the latest status of issues: open, resolved, . . .
- discuss the issue (`@mention`)
- add semantics (metadata): tags, project, milestone, relationships, priorities, . . .

Recapitulation

Task

Break.

Netiquette

- Never forget that you are talking to human beings.
- Be as careful, respectful and gentle as possible.
- Expect as little as possible.
- Only judge on technical issues, never on persons.
- There are no golden rules, cultures can disagree on everything.

Task

Do you agree with that list? Discuss your experiences.

First Steps in Bug Reports

Make sure that:

- You use the correct issue tracker.
- You read about how to use that issue tracker.
- Use specialized helper programs, if available, like reportbug.

Conclusions vs. Observations

What are observations?

- stack strace
- assignment to wrong variable
- program output
- missing assertion
- wrongly taken branch
- no log output

Task

Break.

H1

Task

Write in the forum which kind of issues you would like to have.
E.g. using programming language, documentation, testing, ...

Task

@kodebach renaming case study

Task

Close your issues if questions were answered.

P1

Task

What are your current thoughts on the project?

Feedback

- Feedback Talk
- ECTS breakdown realistic?
- Best/Worst Videos?

Presentation

Task

Get a presentation date in TUWEL (“Presentation Date”).
Additionally, use “description” when uploading slides for the date.
Upload of video preferable to be faster at meetings.

Team

Teamsize: 1-3

Task

Discuss potential collaboration in TUWEL discussions forum.
Add yourself with name+matrnr+GitHub in Teams
Add yourself in “Project Teams”

L02 Source Code Management

[1] Markus Raab and Gergö Barany. Introducing context awareness in unmodified, context-unaware software. In *Proceedings of the 12th International Conference on Evaluation of Novel Approaches to Software Engineering - Volume 1: ENASE,*, pages 218–225. INSTICC, ScitePress, 2017. ISBN 978-989-758-250-9. doi: 10.5220/0006326602180225.