Effort estimation based on Mining Software Repositories
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A Preliminary Approach

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What are we searching with the model?

- A model able to estimate the applied effort in FLOSS projects
- Be able to assess separately the effort applied per developer or company into the project

Benefits

- Return-on-investment
- Open process visibility
- Fairness of contributions
- Effort-saving synergies

Comparison with CoCoMo

- Cocomo only takes into account source lines of code
- To configure it and to obtain reliable data it is necessary to introduce a lot of information
- Only gives an overall estimate of the project, it can't be disaggregated by developers or companies

What do we have for the moment?

- Model 1 – Assessed by number of commits
  - Authors are classified in 3 types (Prof, Semi, Amat)
    - Prof → at least 10% of total commits
    - Semi → at least 5% of total commits
    - Amat → under 5% of total commits
  - Assessment
    - Prof → 1 PM per month worked
    - Semi → 5/22 PM per month worked
    - Amat → 3/30 PM per month worked

What do we have for the moment?

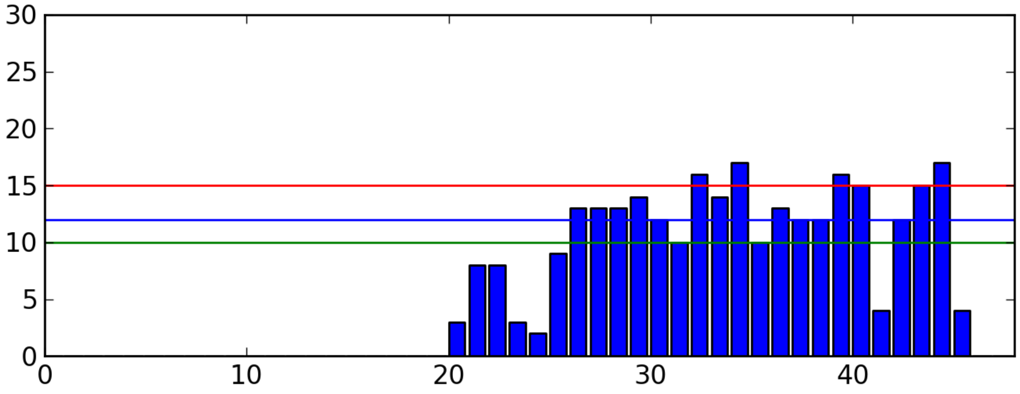
- Model 3 – Assessed by number of workdays
  - Authors are classified in 2 types (Prof, Rest)
    - Prof → at least 15 days per month
    - Rest → under 15 days per month
  - Assessment
    - Prof → 1 PM
    - Rest → Linear function between last professional author (1 PM) and last non-professional author (near zero PM)

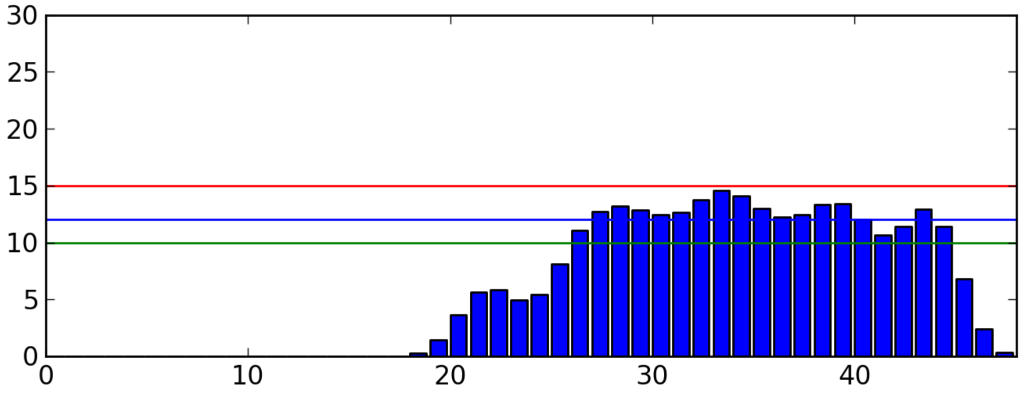
What do we have for the moment?

- Model 5 – Assessed similarly to Model 3
  - Authors are classified in 2 types (Prof, Rest)
    - Prof → at least 15 days per month
    - Rest → under 15 days per month
  - Assessment
    - Prof → 1 PM
    - Rest → by percentage of commits (XX)
    - PM_tot = Prof_Authors * 1.XX

What do we have for the moment?

- Model 7 – Smoothing function used
  - Authors are classified in 2 types (Prof, Rest)
    - Prof → at least 10 days per month
    - Rest → under 10 days per month
  - Assessment
    - Prof → 1 PM
    - Rest → Proportional share of number of workdays (days / 10)





Feedback

- Biggest problem → Little info
- What do we need? → Feedback
- Possible solution → Poll

Conclusions

- Several benefits compared with CoCoMo
- Oriented to FLOSS projects
- Its precision can be upgrade with MailLists and Bug trackers