Software Evolution Case Studies

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Benevol 2005
Aspect mining research results will have to be validated by means of a series of case studies.

Case study

“Aspect mining research results will have to be validated by means of a series of case studies.”

Technique → Case → Distribute

= illustrate the applicability on a concrete project
Examples

Benevol

ASML  a Perl Program  DocGen  Ant  LanSim  Tomcat

Icsm04

Mozilla  CodeCrawler  Linux  Apache  Gcc
Comparison

7 A case per group/technique

- We can’t compare using a different basis!
- We can’t build on each other’s findings

7 Are we really that different?

- Understanding, quality of architectures, aspect mining,..
- It’s all about Software Evolution!
  - Similar solutions?
  - Common problems?
LanSimulation

Which components are strongly coupled?

Lanza

Ratzinger

Rysselberghe
Representative

• Common evolution characteristics?
  – What’s typical/common?
  – Enough information about evolution?

• Characteristics of the case?
  – How do we measure?
  – Amount of info available?
  – When?
Retrospective View

Common

• Life-cycle
• Constant change
• Feature requests
• Large/Coarse

Case (Tomcat)
Retrospective View

Common

- Life-cycle
- Constant change
- Feature requests
- Large/Coarse

Case (Tomcat)

- Build from previous product
- Constant change
- Implements specification
- Limited/Coarse
- Java
- Design docs/rationale
- Mailing Archives
Your characteristics

Is this typical?

- 450 LOC
- 19,000 LOC
- 90,000 LOC
- 170,000 LOC

- XP-methodology
- Tests integrated
- Ex-research. prototype

- Perl
- Java
- C
Literature characteristics

- System serves a user base
- User base has changing demands
- Generally grows
- Constant change (bugs/functional)

YES!  NO!
I would...
Case Selection

• How do we select our cases?
  – Based on measures? Which?
  – Based on quality of information?

• Where do we search?

• How did you act in the past?
Maybe like this?

- Popular projects (DLs/rankings)
- State (#releases/Warnings/Beta?)
- Size Evolution (age/normal trend)
- User impact (reporting/#MRs)
- Changes (change logs)
Conclusion

• Many open questions!
  – Common Characteristics?
  – Case Selection?

Discuss

speak with others about it;
talk it over in detail;
have a discussion;