UNIVERSITÄT BERN

# The Software Evolution Cup 2011 Retrospective and Results

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# Things We Liked About Your Projects

- The solutions that had smart heuristics
  - *Degree of confidence in a method being suspect*
  - *Detectors with “veto” power*
  - *“Clusters of methods”*
- Evolution Analysis
  - *methods that have different LOC across the versions are likely not dead - people work on them!*
- The solutions that escalated the results
  - *but also the solutions that argued why classes can’t be considered dead unless one performs field analysis*
  - Some really well written reports
    - *We liked to see reports that talked also about the limitations*

# Things We Liked About Your Projects (II)

- Strategies that consider the possibility of getting input from the “maintainers” of the system
  - *on whether a cluster of methods are dead or not*
  - *on what are some of the entry points of the system*
- Projects that focused on precision

# Things We Liked About Your Projects (III)

- Dynamic analysis strategies
  - *automatically instrumenting the classes that appear in the FAMIX models that are loaded from the disk*
- Cool new concepts
  - *The “deadliest code”*
  - *Undead code*
- People that got out of their comfort zone and tried new stuff
  - *AspectJ*
  - *Spy framework*
  - *The Ecco meta-model for ecosystem analysis*

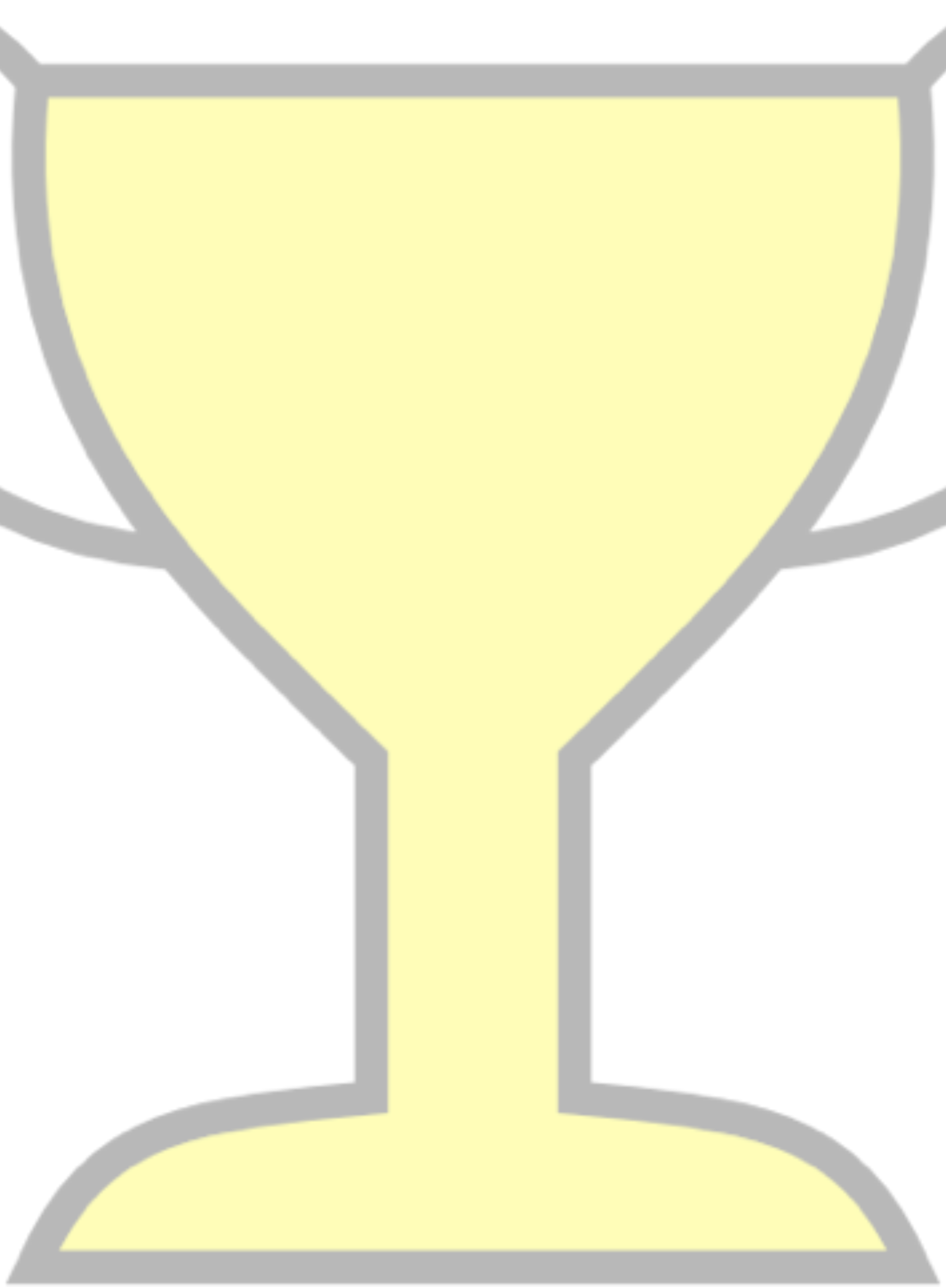
# By the way, about sorting in Smalltalk...

> myCollection asSortedCollection: [:a :b l a LOC > b LOC]

# Things That Tricked You

- Methods and Classes that are called through reflection
- Classes that were called elsewhere in the Ecosystem
- Classes that are not referenced but are important for their hierarchy

**“The team that provides the tool with the best accuracy will be declared the winner of the Software Evolution Cup [...]”**



# How we measured accuracy

- [Accuracy is ] the number of lines of code that are **correctly detected** as containing dead code **minus** the number of lines that are **incorrectly detected** as containing dead code
  - The following code is considered correctly detected dead code
    - *Code which is used elsewhere in the ecosystem but not in the projects that we gave you for analysis*
    - *Code which is only used in the test cases; it could still be dead*
    - *Results show that using combined strategies works best*

# The Winner
# and The Runners Up

| Group | Correct - Incorrect LOC | Members | Techniques |
|---|---|---|---|
| **8** | **183** | **Olivier Flückiger** 🏆 | **All** |
| 5 | 147 | Cedric Reichenbach & Remo Diethelm | Static, Historical |
| 3 | 128 | Michael Rüfenacht & Simon Baumann | Static, Historical |
| 6 | 92 | Hervé Sierro & Frédéric Aebi | All |
| 1 | 89 | Mascha Kurpicz, Stefan Kodzhabashev & Samaneh Soleimani | Static, Dynamic, Historical |

# The “Total Recall” Alternate Definition

- [Accuracy is] the total number of lines of code that are **correctly detected** as containing dead code
  - *We wanted to see how would the ranking have been if we did not penalize for lines of code incorrectly detected*
  - *Because the “official” definition is quite merciless and a few teams ended up with a negative overall lines of dead code*

# The “Total Recall” Alternate Ranking

| Group | Correct LOC | Members | Techniques |
|---|---|---|---|
| 6 | 299 | Hervé Sierro & Frédéric Aebi | All |
| 8 | 194 | Olivier Flückiger | All |
| 5 | 168 | Cedric Reichenbach & Remo Diethelm | Static, Historical |
| 3 | 142 | Michael Rüfenacht & Simon Baumann | Static, Historical |
| 2 | 101 | Julian Schelker & Roger Kohler | All |

# The “Swiss Precision” Alternate Definition

> [Accuracy is] the total number of true positive artifacts detected in the Top 10

- *Only two projects had 9 true positives in their Top 10*

# The “Swiss Precision” Top Two Ranked Teams

| Group | True Positive Artifacts | Members | Techniques |
|---|---|---|---|
| 9 | 9 | Simon Vogt & Markus Balsiger | All |
| 2 | 9 | Julian Schelker & Roger Kohler | All |

## Congratulations and thanks to everybody!
## You did nice work.

[*the winner, pass by my office to retrieve your diploma*]