Review 17

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**Detecting Object Usage Anomalies**

In this Paper, Wasylkowski et al. how to detect object usage anomalies within a project, using the object usage patterns from the same project. To do this, they developed a tool called JADET, which mines all usage (methods – itemset) of each objects, and creates pattern from existing projects. At the end, they evaluated JADAET, which detected yet undiscovered defects in well-known open-source projects, such as aspectJ.

In evaluation of this tool, they used JADET on ACT-RBOT, ASPECTJ, AZUREUS, COLUMBA, MUSICOMP 1.0 beta. After they ran JADET for each project, JADET was able to produce some suggestions on potential object usage anomalies.

Yet, as they suggested, the scope of JADET was very narrow. They did not include multithreading feature of Java and the patterns created by JADET does not reflect all information in models. Also, whereas they mentioned that the project set they chose to evaluate JADET might not be representative, they also missed brief stats on each subjects (projects), such as SLOC, type of project, etc.

The main contribution of this study, in my opinion is that they focused on only object usage, not the programming rules, which can involve many objects for just one programming rules. In this way they were able to utilize more of dataflow information to get better rules than just looking at textual match (such as using JSA).

**Question:**

1. One thing that concerned me as soon as I read this was “what if the object is used across multiple functions?” What will happen?