

A systematic literature review on bad smells –5 W's: which, when, what, who, where

This paper aims to provide an overview of the study of the topic of bad smells from 1990 to April 2017. As mentioned in the title, the authors discuss the topic in terms of five main questions: which, when, what, who, and where. Through this study, they discovered that the duplicate code bad smell has been studied much more than any others, and that it is often studied alone. The other types of bad smells are more often studied with additional bad smells, though many of the smells identified have only been studied in one paper. Next, the authors discover that interest in the topic of bad code smells is growing as both the number of papers and number of authors publishing papers on the topic continue to grow as of April 2017. After that, they suggest that the contradictory findings in the research may be a result of the lack of benchmarks to be used in a formal study and note that studying bad smells together to see if they are related is a promising area for future study. Fourth, the authors identify the researchers who have published the highest amount of bad smell papers over the years, and they discover that there is one large community of researchers and several smaller outside groups. Finally, the authors find that the venues publishing the papers distinguish between duplicate code and other bad smells, which may explain the fact that they are separated in the research. In summary, the authors gather and categorize all research relevant to code-based bad smells in this paper.

The author's study is very thorough and insightful. One of its biggest strengths is the fact that it used a comprehensive selection technique to find about 350 relevant papers to investigate in its study. This large database allowed the authors to discover some important and interesting findings. They were also able to categorize the different perspectives researchers use to study code-based bad smells. Additionally, the advice that the authors provide for researchers in the field of bad smells is invaluable, even for our own study. For example, they propose that using evolving metrics to detect bad smells may be a topic worth looking into. They also note that the field suffers because of the lack of an overall taxonomy to classify bad smells. Finally, the authors make a key point when they state that the contradictions found in the research could be due to the nonexistence of a benchmark system to perform analyses on. This paper is a strong one because of its thoroughness and the insights it provides.

While the scope of the investigation is beneficial for the broad trends found in the paper, its large size also harms the study. The authors were not able to get into the details of some of the topics. For example, the authors were not able to write a detailed report about the connection between different bad smells studied together in one paper. Their focus was broader, as they focused on how only a small amount of the research attempted to find connections between code-based bad smells, but they did not summarize these findings. Overall, the paper is extremely well written, but occasionally its focus stays a little too broad.

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