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Exploiting Code Search Engines to Improve Programmer Productivity and Quality

Reuse of existing frameworks or libraries has become a common practice in the current software development process due to several advantages such as low cost and high efficiency. However, programmers often face challenges in reusing APIs of existing frameworks or libraries due to the complexity and lack of documentation. Therefore, to assist programmers in effectively reusing APIs of existing frameworks, we mine frequent API usage patterns from the applications available on the web by exploiting a code search engine. We try to improve productivity by suggesting the mined patterns and quality by using mined patterns to detect bugs in the API client code written by programmers. In particular, we developed three applications that address three different kinds of issues related to productivity and quality and showed that the applications perform better than the existing related tools.

- PARSEWeb: How shall I write API client code to implement my task?
- NEGWeb: How can I find bugs in my API client code?
- SpotWeb: Where to start for reusing APIs of an open source framework or library?

REFERENCES

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