

A parameterized unit test framework based on symbolic Java PathFinder

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Abstract: Parameterized unit test recently gains a lot of attention as it saves testing cost and is more efficient in term of code coverage. We present a framework for running parameterized unit tests (PUT) based on Java PathFinder (JPF) and JUnit. Our approach bases on model checking and symbolic execution of JPF for generating standard unit tests. As a result, we achieve high structural and path coverage. The generated unit tests are automatically executed by JUnit so programmers receive immediately assertion failures if any. Currently, our approach mainly works with numeric and boolean data type but it is possible to extend our framework for other data types such as string. © 2009 IEEE.

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Index Keywords: Code coverage; Data type; Java PathFinder; Parameterized; Path coverage; Symbolic execution; Unit tests; Knowledge engineering; Model checking; Parameterization; Systems engineering; Testing; Automatic test pattern generation

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