

Jordan University of Science and Technology

An Agent Oriented Source-level Debugger on Top of a Monitoring Framework

Authors: Ziad A. Al-Sharif and Clinton Jeffery

Abstract: Standard debuggers are usually limited in the amount of analysis that they perform in order to assist with debugging. This paper presents UDB, an agent-oriented source-level debugger for the Unicon programming language with a novel architecture and capabilities. UDB combines classical debugging techniques such as those found in GDB with a growing set of extension agents. The paper tests three hypotheses: 1) a source-level debugger built on top of a monitoring framework can surpass ordinary debuggers with more debugging capabilities, 2) a debugger based on a high-level monitoring framework allows easier and more efficient agent-based extension, and 3) an agent-oriented debugger is easier to extend on the fly with new agents that utilize automatic debugging and dynamic analysis techniques.