

Integrating Soot-Based Static Analysis Tools into IDEs with Language Server Protocol

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Motivation

Problem:

- Many static analysis tools produced in academia do not have IDE support. Warning messages often lack context.
- Traditionally, integrating these tools into IDEs requires writing a Plugin for each IDE tool.
- To achieve the best IDE support, precise source code positions are required in the warnings.
- Many of these tools were built on top of Soot. Soot has a solid java byte code frond-end. However, precise source code positions are not preserved in the byte code.

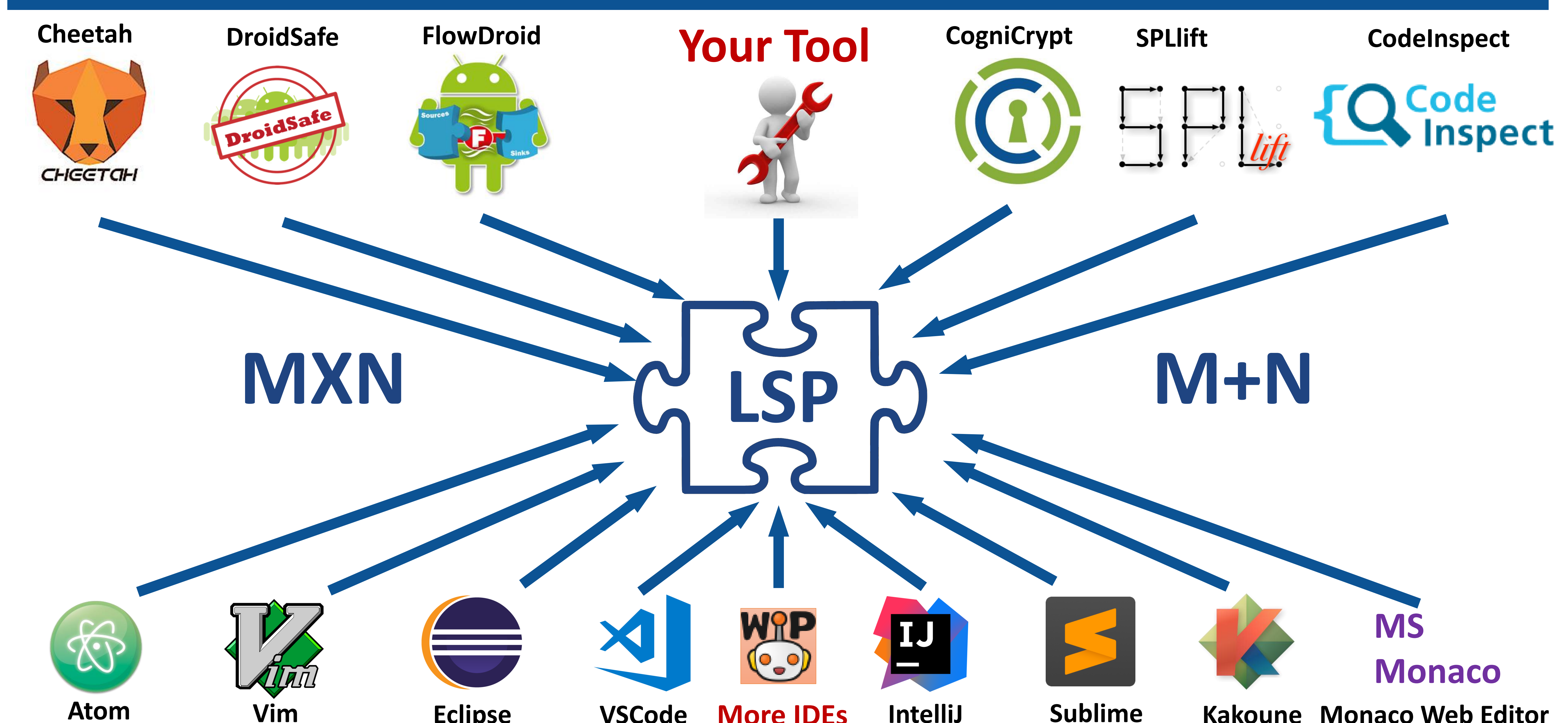
Language Server Protocol:

- A common protocol for programming language analyzers to be decoupled from IDEs using JSON-RPC
- Reduce **MxN** complexity problem to **M+N**
- Many tool features are supported: Code Highlighting, Hover Tips, Errors & Fixes ...

WALA:

- has a java source code frond-end, which is built on top of Eclipse JDT. Source code position infos are very well preserved.

Goal



Approach

