



Data Dependency using MSSA: Analysis and Contrast

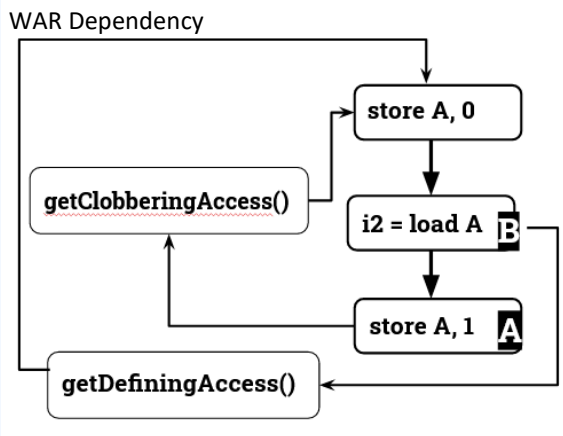
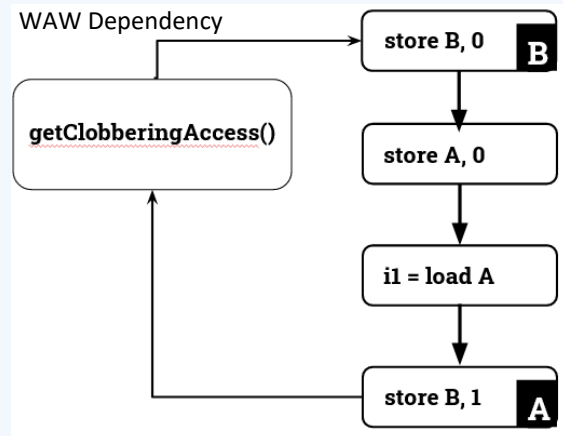
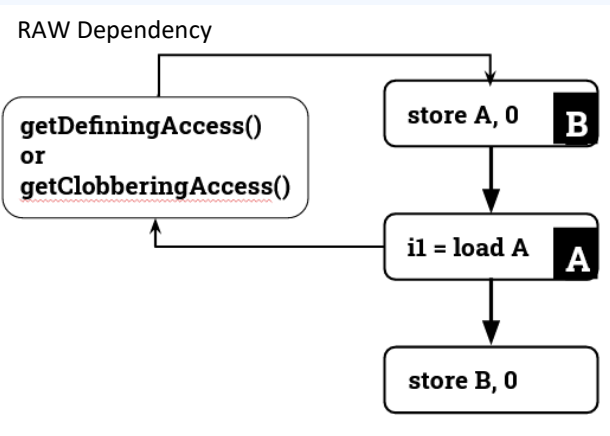
Rithik Sharma



CodeMoverUtils uses data dependency information to check safety of the candidate code-motion. Data dependency represents relationship between two memory accesses, example WAW, WAR and RAW dependencies.

For Code Motion safety of memory accesses we need to have data dependence information.

We demonstrate the use of MemorySSA for finding RAW, WAR and WAW dependency. Using MSSA for data dependence has advantages like flexibility as dependence can be found on demand. It provides a approximate result and the calls to getClobberingAccess are expensive.



Data Dependence information can also be found using:

1. Dependence Info Analysis
2. Alias Analysis
3. Loop Access Analysis
4. MemorySSA (as in LICM)

Outcome: Finding data dependency with MSSA will increase the applicability and adaptability of CodeMoverUtils