A General Static Analysis Framework Based on a Transitional Semantics

20190065 김기환 (kimkihwan@kaist.ac.kr)

* transitional style semantics (concrete) =
* state = = : program label = next part of program

: machine state = memory state, program continuation, etc.

* set of states = where is set of labels and is set of machine state
* where

*note. can be defined by relation lifting of ‘’ with functor*

* reachable states (concrete semantic) =

= where

*note. Kleene thm. holds because is CPO with infimum and upper bound , and is continuous.*

* concrete semantic function =
* concrete semantic domain = where partial order is
* abstract domain =
* abstract semantic function =
* program-label-wise reachability (flow sensitive) =

collection of all state -> label-wise collection -> label-wise abstraction

*note. since program syntax is fixed, we assume set of labels is also finite and fixed*

* Galois connection =

with

* where