

Formal specification for RAVEN

$prog ::= \overline{decl}$

$decl ::= proc_decl \mid at_proc_decl \mid func_decl \mid intf_decl \mid module_decl \mid module_inst \mid pred_decl \mid import$

$proc_decl ::= proc\ proc(\overline{x:T})$
requires a
ensures a
 $\{stmt\}$

$at_proc_decl ::= atomic\ proc\ proc(\overline{x:T})$
requires a
ensures a
 $\{stmt\}$

$func_decl ::= function\ func(\overline{x:T}) : T$
requires a
ensures a
 $\{stmt\}$

$intf_decl ::= interface\ intf[\overline{z:I}]$

$module_decl ::= module\ mod[\overline{z:I}] : intf\ \{e\}$

$module_inst ::= module\ mod = mod[\overline{z:I}]$

$pred_decl ::= predicate\ pred(\overline{x:T})\ \{a\}$

$import ::= import\ intf$

$stmt ::= stmt; stmt \mid var\ x:T \mid x := e \mid x := new(\overline{f}) \mid \overline{x} := proc(\overline{e}) \mid x.f := e \mid assert\ a \mid if\ (e)\ \{stmt\}\ else\ \{stmt\} \mid while\ (e)$
invariant $a\ \{stmt\} \mid inhale/exhale/label/goto/fold/unfold$