

# Languages-beta: IMP-4 \*

The P<sub>LAN</sub>CompS Project

IMP-4.cbs | PLAIN | PRETTY

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*Language* "IMP"

## 4 Programs and variable declarations

*Syntax*  $Pgm : \text{pgm} ::= \text{'int' idlist ';' stmt}$

*Semantics*  $\text{run}[\![ \_ : \text{pgm} ]\!] : \Rightarrow \text{null-type}$

*Rule*  $\text{run}[\![ \text{'int' } IL \text{' ';' Stmt } ]\!] =$   
     $\text{scope}(\text{collateral}(\text{declare-int-vars}[\![ IL ]\!]),$   
     $\text{execute}[\![ Stmt ]\!])$

*Syntax*  $IL : \text{idlist} ::= \text{id (' , ' idlist)?}$

*Semantics*  $\text{declare-int-vars}[\![ \_ : \text{idlist} ]\!] : (\Rightarrow \text{environments})^+$

*Rule*  $\text{declare-int-vars}[\![ I ]\!] =$   
     $\text{bind}(\text{id}[\![ I ]\!], \text{allocate-initialised-variable}(\text{integers}, 0))$

*Rule*  $\text{declare-int-vars}[\![ I \text{' ,' } IL ]\!] =$   
     $\text{declare-int-vars}[\![ I ]\!], \text{declare-int-vars}[\![ IL ]\!]$

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\*Suggestions for improvement: [plancomps@gmail.com](mailto:plancomps@gmail.com).  
Reports of issues: <https://github.com/plancomps/CBS-beta/issues>.