

AXIOMATIC DEFINITION OF MINI-LANGUAGE CORE SUBSET ¹

Program

$\frac{\{P\}S\{Q\}, Q \Rightarrow R}{\{P\}S\{R\}}$	Consequence-1
$\frac{P \Rightarrow Q, \{Q\}S\{R\}}{\{P\}S\{R\}}$	Consequence-2
$\frac{\{P\}S_1\{Q\}, \{Q\}S_2\{R\}}{\{P\}S_1; S_2\{R\}}$	Composition
$\{P[E/V]\}V := E\{P\}$	Assignment
$\frac{\{P \& B\}S\{Q\}, P \& \neg B \Rightarrow Q}{\{P\}\text{if } B \text{ then } S \text{ end if}\{Q\}}$	If-then
$\frac{\{P \& B\}S_1\{Q\}, \{P \& \neg B\}S_2\{Q\}}{\{P\}\text{if } B \text{ then } S_1 \text{ else } S_2 \text{ end if}\{Q\}}$	If-then-else
$\frac{\{P \& B\}S\{P\}}{\{P\}\text{while } B \text{ loop } S \text{ end loop}\{P \& \neg B\}}$	Loop

¹M. Marcotty and H. F. Ledgard, *Programming Language Landscape: Syntax, Semantics, and Implementation*, 2nd ed., SRA, 1986.