COMP 3610 / 6361

27/09/2023

$\rho_0 = \emptyset$ $\quad F(\rho_0) = \rho_0$

$\rho_1 := F(\rho_0)$

$$F(\rho_0) = \{(s,s) \mid (s, \rho_{\text{false}}) \in B(b)\}$$

$$=: \rho_1$$

$$F(\rho_1) = \{(s,s) \mid (s, \rho_{\text{false}}) \in B(b)\} \cup$$

$$\{(s,s') \mid (s, \text{true}) \in B(b) \wedge$$

$$\exists s'' . (s,s'') \in C(c) \wedge (s'',s') \in \rho_1\}$$

while $(!\ell > 0)$ do

$m := !m + 1$

od

$\mathcal{C}(c) : \text{Store} \to \text{Store}$

$$\ell = \frac{m \times (m+1)}{2}$$

$$\{P\}\ \text{skip}\ \{P\}$$

$$\ell = 3 \Rightarrow \ell \geq 2$$

$(\ell_0 = n \wedge n > 0 \wedge \ell_1 = 1)[1/\ell_1]$

$\Leftrightarrow (\ell_0 = n \wedge n > 0 \wedge 1 = 1)$

$\Leftrightarrow (\ell_0 = n \wedge n > 0)$

$$\frac{}{\vdash \{\ell_0 = n \wedge n > 0\}\ \ell_1 := 1\ \{\ell_0 = n \wedge n > 0 \wedge \ell_1 = 1\}}\ \text{assign}$$

$$\frac{\vdash \{\ell_0 = n \wedge n > 0\}\ \ldots \qquad \{\ell_1 := n!\}}{}$$