Assignment 1

Will Crichton (wcrichto)

Problem 1

Part 1:

$$
\begin{aligned}
\textsf{Property } p1 ::= &\quad (> 0 \ \wedge < 5) \ \vee = 10 \\
p2 ::= &\quad =' X' \vee =' Y' \\
p3 ::= &\quad \varepsilon
\end{aligned}
$$

$$
\begin{aligned}
\textsf{Schema } \tau ::= &\quad \textsf{num}\langle p1 \rangle \\
\mid &\quad \left\{ \textsf{'a'} : \textsf{bool}, \textsf{'b'} : \textsf{string}\langle p2 \rangle \right\} \\
\mid &\quad \left[\left\{ \textsf{'x'} : \textsf{num}\langle p3 \rangle \right\} \right]
\end{aligned}
$$

Part 2:

$$\frac{}{\textsf{false} \sim \textsf{bool}} \text{ (S-Bool-False)} \qquad \frac{}{\textsf{true} \sim \textsf{bool}} \text{ (S-Bool-True)}$$

Problem 2

Part 1:

Part 2:

Accessor safety: for all a, j, τ, if $a \sim \tau$ and $j \sim \tau$, then there exists a j' such that $(a, j) \overset{*}{\mapsto} \varepsilon, j'$.

证明. □