158 Can we prove the refinement

$$P \Leftarrow t:= t+1.\ P$$

for $P = t'=5$ ? Does this mean that execution will terminate at time $5$ ? What is wrong?

After trying the question, scroll down to the solution.

§ Yes, we can prove it.

$$t{:=}\ t+1.\ \ t'=5 \qquad \text{use Substitution Law}$$
$$=\ \ t'=5$$

Yes, it means that execution will terminate at time 5 . What's wrong is this specification is unimplementable. What if the computation starts at time 6 ?

$$\forall\sigma\cdot\ \exists\sigma'\cdot\ \ t'=5 \land t'\ge t \qquad \text{specialize to } t=6$$
$$\Longrightarrow\ \ \exists\sigma'\cdot\ \ t'=5 \land t'\ge 6$$
$$=\ \ \bot$$