

# strengthen postcondition

/Reference manual/Z-related commands/Refinement commands

This command is part of the experimental [refinement editor](#).

The *strengthen postcondition* command refines a specification statement to another with a stronger postcondition. It applies the following inference rule of the refinement calculus.

$$\frac{\vdash? R \Rightarrow I \wedge Q \quad \vdash? \Delta F[P \wedge I, R]}{\vdash? \Delta F[P, I, Q]}$$

where  $R$  is the new postcondition.

No [code](#) is implicitly generated by this refinement rule.

The *strengthen postcondition* command is applicable when any specification statement  $\Delta F[P, I, Q]$  in a goal is inspected, except where the postcondition is already as strong as it can be (*false*).

The new postcondition is entered into a dialogue box using the syntax of a Z predicate. The default response is the previous response. Alternatively, if a suitable predicate is displayed in the same window, that can have been selected first (crossed). The new postcondition is typechecked in the environment of the inspected specification statement.

# 1. Tactic example

*“strengthen postcondition” “R” p*

This example applies the *strengthen postcondition* command to specification statement *p* using the predicate *R*.

*IT 20-Nov-2000*