

505 Many programming languages require a variable for input, with a syntax such as **read** x . Define this form of input formally. When is it more convenient than the input described in Section 9.1? When is it less convenient?

After trying the question, scroll down to the solution.

§ I suppose it means to read on a specific channel, say *key* .

read $x = key?$. $x := key$

It is more convenient if we always read from that one particular channel; the **read** x syntax saves us from having to say what channel. But it complicates the frame rule because we can read from a channel without saying the name of the channel. If we say **frame** x so that channel *key* is not visible, what does **read** x mean? And it requires a variable in addition to the channel; the syntax *key?* doesn't require a variable.