

5.7 Dan wants to wash his clothes with a washing machine *wm*, wash his dishes in a dishwasher *dw*, and bathe in a bathtub *bt*. The water supply doesn't have enough pressure to do more than one of these activities at once. Here is a classical representation of the problem:

Corrections to the problem representation are shown in red

Initial state: $\text{status}(\text{dw}, \text{ready}), \text{status}(\text{wm}, \text{ready}), \text{status}(\text{bt}, \text{ready}),$
 ~~$\text{clean}(\text{dan}, 0), \text{clean}(\text{clothes}, 0), \text{clean}(\text{dishes}, 0),$~~
 ~~$\text{loc}(\text{dishes}, \text{dw}), \text{loc}(\text{clothes}, \text{wm}), \text{loc}(\text{dan}, \text{bt}), \text{use}(\text{water}, 0)$~~

Goal formula: $\text{clean}(\text{clothes}, \mathbf{x}), \text{clean}(\text{dishes}, \mathbf{x}), \text{clean}(\text{dan}, \mathbf{x})$

Operators:

<p>start-fill(<i>x</i>) precondition: $\text{status}(x, \text{ready}), \text{use}(\text{water})$ effects: $\text{status}(x, \text{fill}), \text{status}(x, \text{ready}), \text{use}(\text{water})$</p>	<p>end-fill(<i>x</i>) precondition: $\text{status}(x, \text{fill})$ effects: $\text{status}(x, \text{full}), \text{status}(x, \text{fill}), \text{use}(\text{water})$</p>
<p>start-wash(<i>x</i>) precondition: $\text{status}(x, \text{full})$ effects: $\text{status}(x, \text{wash}), \text{status}(x, \text{full})$</p>	<p>end-wash(<i>x, y</i>) precondition: $\text{status}(x, \text{wash})$ effects: $\text{status}(x, \text{ready}), \text{clean}(y), \text{status}(x, \text{wash})$</p>

Corrections to Figure 5.11 are shown in red

