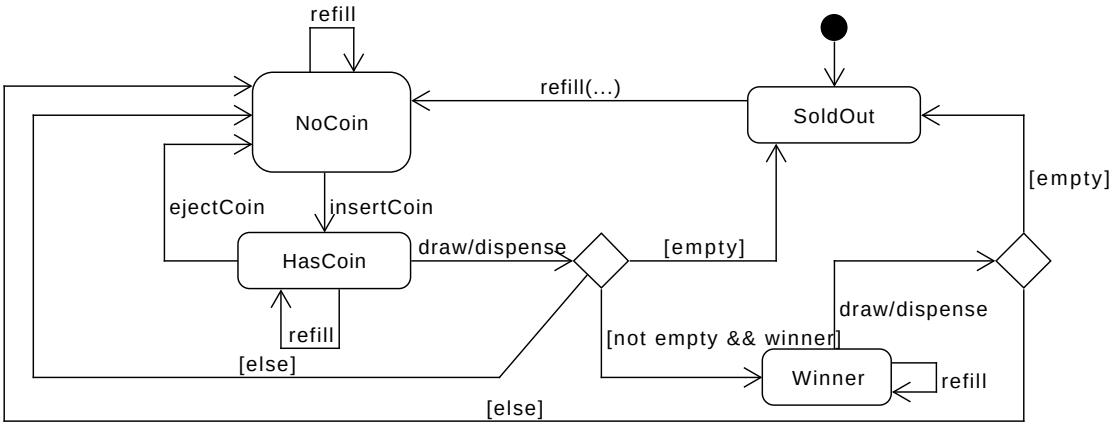

Figure 1: State diagram v1.0, using choices and dynamic evaluation

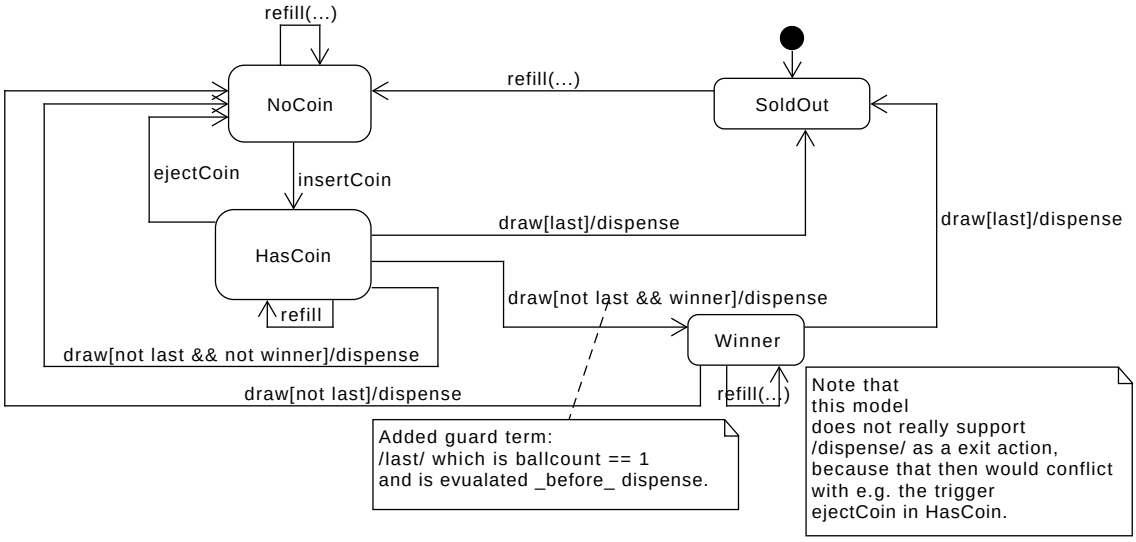

Figure 2: Only using guards

Guards and choices revisited

Diagram 1 is an allowed form in UML, using choice pseudo states that always resolve ([else] or default).

- Dynamic evaluation is allowed on a transition and may use the results of actions (dispense in the example) on that transition.
- This approach MUST always have one guard active OR should have a default a.k.a. else. Rationale: you started the transition and you must have a valid way out. NOT fulfilling this constraint leads to an ill formed state diagram.

Diagram 2 has a more strict interpretation: Use guards on transitions.

- This approach disallows what is allowed in diagram 1: dynamic evaluation and then make up your mind (in the example: dispense and then look at the empty condition). Diagram MUST evaluate its guard first, which needs an extra condition to be considered: **last**. Rationale: you can not partly start a transition and then retract, so everything must be evaluated before you can consider which of the guarded variants you may choose.
- This solution DOES support all guards to be false, in which case the transition is NOT considered.

Bottom line: The approaches are both valid, non contradictory and complementing each other.
Venlo 2016-05-17.