Exercise 1  \hspace{1cm}(8/10 Points)

Consider the LSC shown in Figure 1.

(i) Provide the abstract syntax of the body of the pre-chart and the main-chart, i.e. two LSC body tuples.  \hspace{1cm}(3)

(ii) Construct the TBA for pre- and main-chart (separately).  \hspace{1cm}(5)

Exercise 2  \hspace{1cm}(2/10 Points)

Consider the local invariant and the condition LSC in Figure 2.

(i) Describe in your own words the requirements expressed by the local invariant and the condition.  \hspace{1cm}(1)

Hint: In particular, when (and when not) the values of expressions \( v = 0 \) and \( x > 3 \) are considered and which effect they have if the expression is (or is not) satisfied.

(ii) Describe in your own words how the meaning changes if the temperatures were exchanged, i.e., if the local invariant was hot and the condition cold. \hspace{1cm}(1)

Figure 1: LSC Requirement on Vending Machine.
Figure 2: Example LSC with condition and local invariant.