

Computer-Aided Verification

Tool Lab Assignment (1)

Due Date: 2006/03/22

Using SMV

There is a vending machine which has 2 types of coin slots for two different **denominations** (e.g. quarters and dimes). I have two different coins. When I insert one coin at a time into the two slots, the amount displayed is correct on the machine. But, when I insert the two coins at the same time (simultaneously), it incorrectly displays **twice the amount of the larger denomination value**. For example, if I insert one dime and one quarter simultaneously, I get 50 cents totally, that is, 2 quarters = 50 cents.

Write a simple SMV program to model the machine. Write a logic property to check the above issue. Find out what is the wrong with the machine using any version of SMV tool such as Cadence SMV, NuSMV, etc. Show a counterexample.

You must hand in your SMV program, the verification results (counterexample), and a single page containing a description of the error you found.