

Clayton School of Information Technology
FIT3013 Assignment 1
Money, Money, Money!
Basic Specification

Due Date: 12noon, 13 Aug 2008

This assignment is about building a simple specification of a sum of money. You are to use the RODIN tool to build the specification.

A sum of money is made up of a number of coins and notes. To simplify things, we will assume coins only for a start, and add notes later on. In Australian currency, there are 6 coins in circulation: 5 cents, 10 cents, 20 cents, 50 cents, 1 dollar, and 2 dollars.

1. **Your first task is to define a Context component called *CURRENCY* that defines the set of *COINS*, and discharge its proof obligations.**

In order to deal with a sum of money (coins in a purse or wallet, for example), we have to include the concept that there may be arbitrary numbers of each coin: 0, 1, 2 or more. We shall model a sum with a machine called *PURSE*, which has as its state variables sufficient to define the coins in a purse.

You will need to think carefully about the data representation for the variables, as a simple powerset of *COINS* will not suffice.

2. **Your second task is to define a Machine component called *PURSE* that defines a handful of coins, and discharge its proof obligations. This machine will need to SEE the context *CURRENCY*.**
3. **Finally, add two events *give(denomination, number)* that removes *number* coins of type *denomination*; and *receive(denomination, number)* that adds *number* coins of type *denomination*. Discharge the proof obligations.**

Submit your solution as a fully commented Rodin export file through the Moodle submission mechanism.