

Week 5 Tutorial

System Specification in Z

The tutorials in week 5 (August 22-26) relate to Malcolm Newey's lectures in week 4 on Z.

1 The Art Collector

Many a wealthy person likes to decorate his/her fine home(s) with objects of beauty and notable value. Of course, these acquisitions must be catalogued and regularly appraised for a variety of reasons including taxation, insurance, publicity and for navigating the collection. Inevitably, the management of this particular "investment portfolio" will be done with the help of some software application, the operations of which must be specified.

In this tutorial you should give the bare bones, in Z, of the specification of the system which is the dynamic collection of artworks. The one given type is *Picture* and there are two lists of interest - the items currently owned and the pictures previously bought and sold.

The operations you should consider are those of buying and selling where, in each case, a price is agreed. Initially, there is an amount of cash available and this changes in the obvious way with each transaction.

There is one constraint to note:- pictures that are sold will never be repurchased.

Inspiration of how to proceed here can be found in the lecture notes. (It is the bus occupancy example.)

2 Time to kill?

The next level of complication is to require that the system keeps track of purchase and selling price for each picture. This will involve functions from pictures to dollars.

What other operations and queries should be specified as we try to capture more of the system?