

3C03 Concurrency
Tutorial Session 5 -Work Sheet

Question 6.1

Two transactions are run concurrently against a bank's database. The first transaction transfers funds from one account to a second account. The second transaction sums up the balances of both accounts. Use FSP to model two-phase locking in these transactions. Use a lock compatibility matrix that includes both Read and Write locks.

Question 6.2

Serializability of transactions denotes the property there exists a sequential schedule of executing the transactions that has the same effect on shared resources as their concurrent execution. Extend the above example to specify serializability of the two transactions as an FSP safety property.

Question 6.3

How does the Labelled Transition System Analysis Tool prove that safety property?