

CSE 332 Section Worksheet - Week 8

Concurrency: Given the following code in a BankAccount class:

```
int balance;
void withdraw(long amt) throws Exception {
    if(amt>balance)
        throw new Exception("Insufficient Funds");
    balance=balance-amt;
}
void deposit(long amt) { balance=balance+amt; }
```

- a. Show an interleaving of calls that will result in an “Insufficient Funds” exception when there shouldn’t be one (that is, if we had performed the calls sequentially, on one processor, the result would have been correct).
- b. Show an interleaving of deposit & withdrawal calls that will result in an incorrect balance.
- c. How can these methods be fixed using ‘synchronize’?
- d. How can these methods be fixed using a ReentrantLock?