Worksheet: Use of trylock()

Rewrite the transferFunds() method below to use j.u.c. locks with calls to tryLock instead of synchronized.

Your goal is to write a correct implementation that never deadlocks, unlike the buggy version below (which can deadlock).

Assume that each Account object already contains a reference to a ReentrantLock object dedicated to that object e.g., from.lock() returns the lock for the from object. Sketch your answer using pseudocode.

```java
1. public void transferFunds(Account from, Account to, int amount) {
2.     synchronized (from) {
3.         synchronized (to) {
4.             from.subtractFromBalance(amount);
5.             to.addToBalance(amount);
6.         }
7.     }
8. }
```
Worksheet solution: Use of trylock()

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```java
1. public void transferFunds(Account from, Account to, int amount) {
2.     while (true) {
3.         // assume that trylock() does not throw an exception
4.         boolean fromFlag = from.lock.trylock();
5.         if (!fromFlag) continue;
6.         boolean toFlag = to.lock.trylock();
7.         if (!toFlag) { from.lock.unlock(); continue; }
8.         try { from.subtractFromBalance(amount); }
9.             to.addToBalance(amount); break; }
10.        finally { from.lock.unlock(); to.lock.unlock(); }
11.     } // while
12. }
```