```
1  typedef struct Account {
2      pthread_mutex_t lock;
3      int balance;
4  } Account;
5
6  void
7  deposit(Account *a, int amount) {
8      pthread_mutex_lock(a->lock);
9      a->balance += amount;
10     pthread_mutex_unlock(a->lock);
11 }
12
13 /* Atomically tranfer money between accounts */
14 void
15 transfer(Account *from, Account *to, int amount) {
16     pthread_mutex_lock(from->lock);
17     pthread_mutex_lock(to->lock);
18
19     from->balance -= amount;
20     to->balance += amount;
21
22     pthread_mutex_unlock(to->lock);
23     pthread_mutex_unlock(from->lock);
24 }
```

Question 1. Does the program have any data races? If it exists explain the data race and fix the function(s).

Question 2. Is there a possibility of a deadlock? If it exists, explain the deadlock and fix the function(s).