

```

1  class account {
2      double balance;
3  public:
4      static const int ERR_INSUF_FUNDS = 1;
5      void withdraw(double amount) {
6          tm {
7              if (balance < amount)
8                  throw ERR_INSUF_FUNDS;
9              balance -= amount;
10         }
11     }
12     void deposit(double amount) { tm { balance += amount; } }
13 };
14 bool transfer_many(vector<account*> from,
15                    vector<account*> to,
16                    vector<double> amounts) {
17     try {
18         tm {
19             for (int i = 0; i < from.size(); ++i) {
20                 from[i].withdraw(amounts[i]);
21                 to[i].deposit(amounts[i]);
22             }
23         }
24         return true;
25     } catch (int e) {
26         if (e == account::ERR_INSUF_FUNDS) {
27             return false;
28         }
29     }
30 }

```

FIGURE 20.9 Code to atomically perform multiple transfers between accounts, using exception-based self-abort.