

One Example

```
class BankAccount{
    private int balance=0;
    int getBalance() {return balance;}
    void setBalance(int x) {balance = x;}
    void withdraw(int amount){
        int b = getBalance();
        if(amount > b)
            throw new WithdrawTooLargeException();
        setBalance(b-amount);
    }
    ...
}
```

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Bad Interleaving

There's still a bad interleaving. Find one.

<pre>void withdraw(int amount){ int b = getBalance(); if(amount > getBalance()) throw new ...; setBalance(getBalance()-amount); }</pre>	<pre>void withdraw(int amount){ int b = getBalance(); if(amount > getBalance()) throw new ...; setBalance(getBalance()-amount); }</pre>
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Locks

```
class BankAccount{
    private int balance = 0;
    private Lock lk = new Lock();
    ...
    void withdraw(int amount){
        lk.acquire(); //might block
        int b = getBalance();
        if(amount > b)
            throw new WithdrawTooLargeException();
        setBalance(b - amount);
        lk.release();
    }
}
```

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Multiple Locks

What happens when you need to acquire more than one lock?

```
void transferTo(int amt, BankAccount a){
    this.lk.acquire();
    a.lk.acquire();
    this.withdraw(amt);
    a.deposit(amt);
    a.lk.release();
    this.lk.release();
}
```

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