

## Handout 13 COMP 304 Didem Unat

```
/* thread one runs in this function */
void *do_work_one(void *param) {
    pthread_mutex_lock(&first_mutex);
    pthread_mutex_lock(&second_mutex);

    /* Do some work */

    pthread_mutex_unlock(&second_mutex);
    pthread_mutex_unlock(&first_mutex);
}
```

```
/* thread two runs in this function */
void *do_work_two(void *param) {
    pthread_mutex_lock(&second_mutex);
    pthread_mutex_lock(&first_mutex);

    /* Do some work */

    pthread_mutex_unlock(&first_mutex);
    pthread_mutex_unlock(&second_mutex);
}
```

```
void transaction(Account from,
                 Account to, double amount)
{
    mutex lock1, lock2;
    lock1 = get_lock(from);
    lock2 = get_lock(to);
    acquire(lock1);
    acquire(lock2);
    withdraw(from, amount);
    deposit(to, amount);
    release(lock2);
    release(lock1);
}
```