

Threads Lab II

CS 245

Oct. 11, 2006

1. Download `Synch1.java` from the class home page. Read through the program documentation, so that you understand what the program does. Compile and run it.
 - (a) What are the three synchronization problems possible here?
 - (b) Following the execution of `consumer.start()` in `init()`, exactly how many threads are executing?
2. Download `Synch2.java` from the class home page. Compare the implementation of the `Queue` class there with the original `Queue` class. This is the only change between the two programs. Compile and run `Synch2.java`.

- (a) Notice there are two commented-out declarations in the `Synch2` class as well as two commented-out statements in that class' `init()` method.

Predict what will happen if you allow those four statements to execute. Confirm your prediction by removing the comment symbols and compiling and running the program. Re-insert the comment symbols.

- (b) A queue of depth one isn't very useful. Modify the implementation of the `Queue` class so that it can store up to five items.

To test your revised `Queue` class, modify the `Producer` class so that it produces 20 integers and sleeps for only 100 ms. between producing items.

You may find the following helpful if you've forgotten how to declare an array in Java:

```
int[] values = new int[5];
```

```
...
```

```
values[head] = v;
```