Practical 5: Threads

Solution

Task 2

(a) Why is the `sleeptime` a random number? What are its bounds?

"`sleeptime`" is a random number to decrease the likeliness that both threads will simultaneously access the shared memory. Its bounds are from 0-4.

(b) What type of output do you get if you have two Consumers and the Producer enters twice? Note: your output will be similar but does not have to be the same as the following.

```
Producer sleeping for 3 seconds
Consumer sleeping for 2 seconds
Consumer sleeping for 3 seconds
Consumer wants to consume.
Consumer wants to consume.
Producer produced Thu Jun 06 11:58:32 EST 2006
Producer Entered Thu Jun 06 11:58:32 EST 2006 Buffer Size = 1
Producer Entered Thu Jun 06 11:58:32 EST 2006 Buffer Size = 2
Producer sleeping for 4 seconds
Consumer Consumed Thu Jun 06 11:58:32 EST 2006 Buffer Size = 1
Consumer sleeping for 0 seconds
Consumer Consumed Thu Jun 06 11:58:32 EST 2006 Buffer EMPTY
Consumer sleeping for 0 seconds
```

(c) What happens if you have two consumers at about half the priority of the Producer? Is this the same as above?

No, this is not the same as above. Because different systems employ different thread scheduling algorithms, the exact behaviour is dependent upon the specific implementation of the threading system.