LAB #6: Threads

Lab writeup is due to your TA at the beginning of your next scheduled lab. Don’t put this off to the last minute! There is pre-lab work to complete before the start of the next lab. NO LATE LAB REPORTS WILL BE ACCEPTED.

1 Objectives

- To gain experience with preemptive schedulers and semaphores.

2 Reading

- Read Chapter 5 on threads

3 Prelab

Each student should complete problems 5.1 and 5.2 individually. Problem 5.1 should be completed using assembly language. The student solutions to these problems are due at the beginning of the lab section.

4 Lab Tasks

1. Each group should select one of their solutions to problem 5.1.

2. Use this thread scheduler with two copies of ProgA and one copy of ProgB as done in section 5.1.1. Given ProgA priority 1 (highest) and ProbB priority 3 (lowest).

3. Watch ports PB2-PB0 and PC2-PC0 on the scope. What do you see?

4. Modify your thread scheduler as you suggested in problem 5.1(e) to prevent starvation.

5. Rerun and watch ports PB2-PB0 and PC2-PC0 on the scope. What do you see?

5 Writeup

Include the following items. In this lab, only one writeup per team is required.

1. A printout of your assembly code.

2. Annotated scope output for PB2-PB0 and PC2-PC0 for item 3 above.

3. Annotated scope output for PB2-PB0 and PC2-PC0 for item 5 above.