Due: Friday, 13 May 2011

Submission: Turn in a printed or neatly written copy of your work at the beginning of class.

1. Give the binary machine code for the following two assembly language instructions, using the instruction set we covered in class.
   (a) LOAD R2 14
   (b) SUB R2 R1 R0

2. Give the assembly language instructions for the following two binary machine code instructions (i.e., your answer should be in a form similar to the instructions given Problem 1).
   (a) 1010 0001 0001 0111
   (b) 1000 0010 0111 1111

3. The following questions relate to Parts I and II of the lab “Process Scheduling” (Wed 27 April).
   (a) Submit your table of average wait time values for overhead versus time quantum (from Part II, Exercise 2(a)) using the First-Come-First-Serve scheduling algorithm.
   (b) What is the trend (i.e., relative change; consider the ratios of successive values) in average wait time as overhead increases when the time quantum is small? When the time quantum is large?
   (c) What is the trend (i.e., relative change) in average wait time as the time quantum increases when the overhead is small? When the overhead is large?
   (d) How do the average wait times compare for this preemptive algorithm and the two non-preemptive algorithms?

4. The following questions relate to Parts III of the lab “Process Scheduling” (Wed 4/22).
   (a) Submit your table of average wait time values (by priority) (from Part III, Exercise 2(a)), using the priority scheduling algorithm. That is, your table should be something like

<table>
<thead>
<tr>
<th>Priority</th>
<th>Average Wait</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

   (b) How does the average wait time tend to change when the quantum is increased? Is this true for all priorities? (I.e., where are there exceptions?)
   (c) How do the average wait times for the higher priority jobs compare (relatively) to the other scheduling algorithms you have investigated. Is this an improvement?
   (d) How do the average wait times for lower priority jobs compare (relatively) to the other scheduling algorithms? Is this acceptable?