

Assignment 5  
(Due date: Friday, 3/13/2009, in class)

Your name:	Grade:
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1. The steps that the LMC performs are closely related to the way in which the CPU actually executes instructions. Draw a flow chart (like the ones shown in the class) that describes the steps that the LMC follows to execute a branch (branch-always) instruction

2. Draw a flow chart that describes the steps that the LMC follows to execute a subtract instruction.

4. Using the LMC simulator (accesses via the course website), compile and test the following LMC program.

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| <pre> 000:  INP       STA N1       INP       ADD N1       OUT       HLT N1   DAT 0 </pre> | <ol style="list-style-type: none"> <li>1) Describe in English the function of the above code segment (what does it do)?</li> <li>2) After successfully testing the code, record the inputs you provided for the testing, and write down the values of the Program Counter and Accumulator.</li> </ol> |
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5. Using the LMC simulator (accesses via the course website), compile and test the following LMC program.

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| <pre> 000:  INP       STA N1       INP       STA N2       SUB N1       BRP LOOP       LDA N1       OUT       HLT LOOP LDA N2       OUT       HLT N1   DAT 0 N2   DAT 0 </pre> | <ol style="list-style-type: none"> <li>1) Describe in English the function of the above code segment (what does it do)?</li> <li>2) Record the values of the Program Counter and Accumulator for each of the following 2 sets of inputs: <ol style="list-style-type: none"> <li>a. 3, 9.</li> <li>b. 9, 3.</li> </ol> </li> </ol> |
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