

**University of California at Berkeley**  
**College of Engineering**  
**Department of Electrical Engineering and Computer Science**

EECS 150  
Spring 2001

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**Homework Quiz # 1 (26 January)**

**Name:** \_\_\_\_\_ **SID:** \_\_\_\_\_

At the BART station they have machines that make change. You put in a dollar bill, and you get back a collection of quarters, dimes, and nickels that sum up to \$1.00.

Note that I have not told you all of the details of how the machine behaves (on purpose—so it is not fair for you to ask clarifying questions!).

Do you think this is a COMBINATIONAL system or a SEQUENTIAL system? (Circle your answer).

If you believe it is a COMBINATIONAL system, SKETCH a high level truth table that describes the combinational behavior of the change machine (e.g., assume an infinite number of coins are available for making change).

If you believe it is a SEQUENTIAL system, SKETCH a high level state diagram that describes the sequential behavior of the change machine.

Make clear what assumptions you are making about the behavior of the change machine.