

Name KEY

CSE 370 - Introduction to Digital Logic Design
Spring 2010
Quiz #8

For maximum credit, show all your work. Please raise your hand if you have a question.

Design a state machine using either a state diagram or Verilog for the following problem. Implement a lock that is operated by two people (Ann and Bob) working together. Each has a push-button (A and B). After reset, the lock starts of locked. To open the lock, first Ann must press and hold down button A. Then while Ann is holding down A, Bob must press and hold down button B. Then while Bob is holding down button B, Ann must release button A. When she does this, the state machine will turn on its output (Unlock) to open the lock. Unlock should stay on until reset is asserted. If the buttons are pressed in any other order, the lock should freeze shut (Unlock = 0) until reset is asserted.

