Student Background Questionnaire and Diagnostic Quiz (Legible Please!)

Name: ____________________________________________________

Student ID: _______________ Card Key # (for lab access): ___________________

Social Net Website: _____________________________________________________

Circle one: Freshman Sophomore Junior Senior Graduate

Have you taken CS 61C? Yes No When? Semester/Year: ___________________

Have you taken EE 40? Yes No When? Semester/Year: ___________________

What is your most ambitious software project (not limited to course projects)?

_____________________________________________________________________
_____________________________________________________________________

What is your most ambitious hardware project (not limited to course projects)?

_____________________________________________________________________
_____________________________________________________________________

How would you describe your skills and interests (circle one per line)?

Mathematical/Analytical		Engineering/Building Things
Hardware				Software
Electrical Engineering		Computer Science
Components			Architecture
Systems			Applications
Technology		Business
The following are diagnostic questions to test your retention of basic knowledge from CS 61c. If they are mysterious, then you probably are not ready to take CS 150.

1. Logic Gates and Boolean Equations

The following implements a logic function $Z(X,Y)$. Write Boolean equations within the boxes below that corresponds to the logic function at that point in the schematic. Write down the simplest possible form of the logic function here: $Z(X,Y) = \phantom{________}$. 

![Logic Gates Diagram](image)

2. Flip-flops and State Diagrams

Given the state machine implementation shown on the left below, complete the state diagram shown at the right.

![Flip-flops Diagram](image)