

Class:	CPE100L - 1002	Semester:	Spring 2020
Points		Document author:	Kristy Nguyen
		Author's email:	nguyek20@unlv.nevada.edu
		Document topic:	Postlab 8
Instructor's comments:			

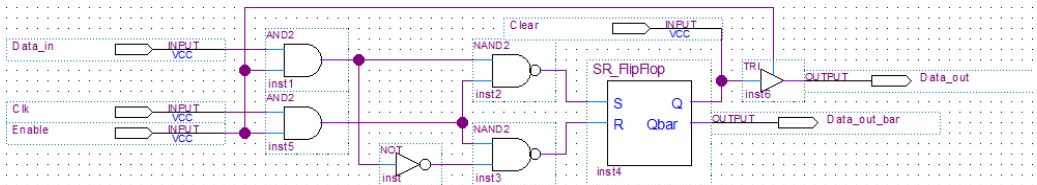
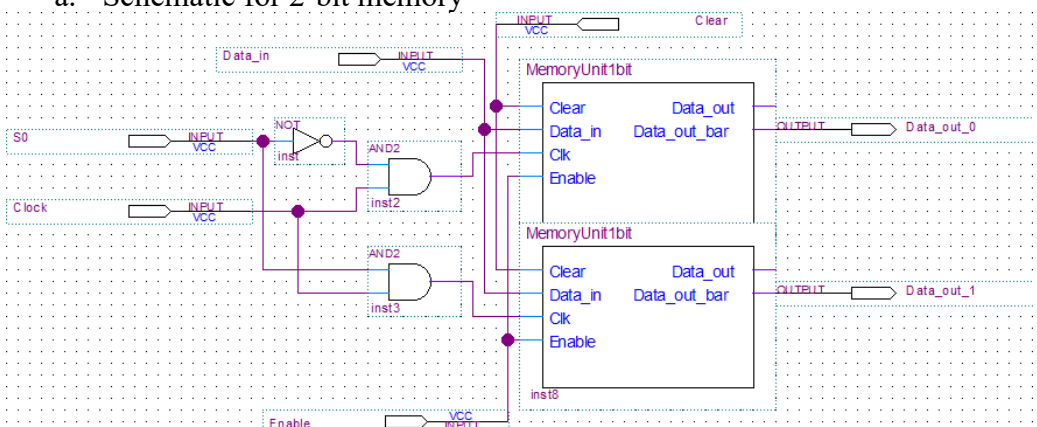
1. Introduction / Theory of Operation

Lab 8 is about getting familiar with sequential elements, such as flip-flops, which state depends on input signals and previous flip-flop states.

2. Prelab Report

My prelab report will be attached with the submission.

3. Results of the Experiments

Experiment	Experiment Results
1	<p>a. Schematic for 1-bit cell</p>  <p>b. Description of how 1-bit cell works</p> <p>The 1-bit memory element memorizes the value from input, only when the programming enable signal is active. When the programming enable signal is inactive, memory content does not change even if the input signal changes its state.</p>
2	<p>a. Schematic for 2-bit memory</p> 

	b. Description of how 2-bit memory works. The 2-bit memory works like 2 1-bit memory cells but one clock signal will be used to control both bits and one data IN will be supplying both bits. The 2-bit memory has a reset function that immediately resets the memory and has one address input to select which cell is programmed.
--	---

4. Answer the questions

1. The JK Flip Flop is similar to the SR Flip Flop but when the J input and K input are low, there is no change in state. It also has an additional clock input that prevents invalid output errors when both J and K inputs are equal to logical "1". It contains four possible input combinations: logical 1, logical 0, no change, and toggle.
2. A flip flop has two inputs used to set or reset outputs. Both of these actions are not available at the same time so this combination of inputs is not allowed. Flip-flops are the simple sequential elements; which state depends on input signals and previous flip-flop states.
3. Sequential logic is a type of logic circuit in which the output depends on the present value of input signals and on the sequence of past inputs.

5. Conclusions

This lab was fairly difficult due to the transition to online learning. The SR, JK, and D flip-flops were simple enough to understand without instruction but the 1-bit memory and 2-bit memory units are concepts that are still quite difficult to grasp. Despite this, I learned that flip flops have a set and reset input and a clock input where you should not be able to change the input if the clock is at a state of 0 or 1. In order to solve the struggle of building the 1-bit and 2-bit memory cells, I discussed with Smit via WebEx in order to figure out how to implement the functions as best as I could.