**ECE 491 Lab 1 – Requirements Checklist**

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| **Description** | **Test Method** | **Detailed Results** |
| 1. Module Interface | Code Inspection |  |
| 2. Module function: accepts eight 4-bit inputs and eight 1-bit “decimal point” inputs and displays eight 7-segment outputs without noticeable flicker. | Demonstration in hardware using Nexys 4 DDR board:  Proper display of all 8 digits and 16 digit symbols.  Proper display of 8 decimal points  Free of noticeable flicker | We verified this requirement by having the 7-seg display show digits 0-7 with decimal points on even numbers, and then displaying 8-F with decimal points on the odd numbers. |
| 3. Uses Nexys4 board 100Mhz clock; all flip-flop clock inputs tied directly to this signal | Code inspection  Using the ‘find all’ feature in Vivado to find all instances of ‘always\_ff’ and checking that it was triggered on the 100MHz clock each time. | We verified that the 100MHz clock is the only signal we are triggering on/ |
| 4. Contains no latches | Inspection of Synthesis Report | We had no warnings of latches being generated. |
| 5. Test circuit – show test that test circuit functions properly to exercises circuit. | Demonstration in hardware  We set the 7-seg digits first from 0-7 and then from 8-F whilst alternating the decimal points on all even digits at first and then all odd ones.  The reset button will be tested when we change from 0-7 to 8-F | 7-seg display displayed expected values on all instances.  The reset button works as expected. When the button is held down the least significant digit is being illuminated when the button is held down. This is because the multiplexer counter is being reset to 0 as the design requirements say |
| In submitting this checklist as part of our report, I/We certify that the tests described above were conducted and that the results of these tests are accurately described and represented. I/We understand that any misrepresentation of the tests or the results constitutes a violation of the College policy on academic dishonesty. | | |
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