**Learning Experience B: Design and Implementation of Combinational Circuits**

**Validation Sheet**

Student: Complete the table below to illustrate your character set and the 4-bit code that corresponds to each character. Since 0000 is a required code, it is listed first in the table.

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**Student**: List all valid input codes for your circuit in the rows labeled “Input Value SW[3:0]”. 0000 is already filled in since it is a required code. Below each code, use the corresponding seven-segment display diagram to indicate the character that should appear on HEX0 for each valid code. (Just right click each segment and change the fill color.) You may have fewer than 13 characters, so some of your cells may be blank. You must have a minimum of 9 characters.

**GTA**: The logic switches on the DE10-Lite Board represent inputs to a seven-segment LED display driver circuit. There should be between nine and thirteen characters. Apply all valid input combinations shown in the table and verify correct character display. To receive credit for a working segment, it must operate correctly for ALL valid input combinations. Points are awarded *per segment*, NOT per character.

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| Input Value  SW[3:0] | 0 0 0 0 | 0 0 0 1 | 0 0 10 | 0 0 1 1 | 0 1 0 0 |
| --- | --- | --- | --- | --- | --- |
| 7-segment LED Display |  |  |  |  |  |
| *GTA use only* |  |  |  |  |  |
| Input Value  SW[3:0] | 0 1 0 1 | 0 1 1 0 | 0 1 1 1 | 1 0 0 0 | 1 0 0 1 |
| 7-segment LED Display |  |  |  |  |  |
| *GTA use only* |  |  |  |  |  |
| Input Value  SW[3:0] | 1 0 1 1 | Not used | Not used |  | Example character |
| 7-segment LED Display |  |  |  |  |  |
| *GTA use only* |  |  |  |  |  |

**GTA Comments:** (Describe discrepancies or any questionable behaviors in the circuit or validation process.)