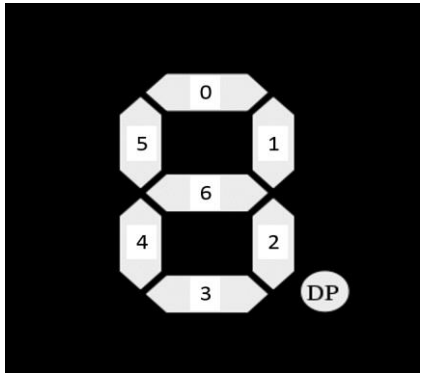
Truth Table Conversion (Binary -> Digit)

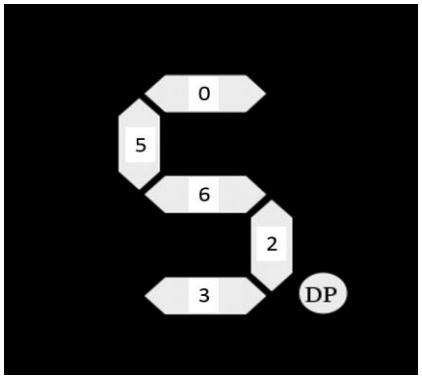
Binary	Digit	
0000	0	
0001	1	
0010	2	
0011	3	
0100	4	
0101	5	
0110	6	
0111	7	
1000	8	
1001	9	
~~1010~~	x	don't care
~~1011~~	x	
~~1100~~	x	
~~1101~~	x	
~~1110~~	x	
~~1111~~	x	

Seven Segment Display Numbering



Another Example of the Digit "5", Drive Segments 1,4 high "1" to display digit "5"

	Digit 5
segment[0]	
segment[1]	1
segment[2]	
segment[3]	
segment[4]	1
segment[5]	
segment[6]	



Map of What Segments to Drive for Each Digit

	Digit 0	Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	Digit 9
segment[0]		1			1					
segment[1]						1	1			
segment[2]			1							
segment[3]		1			1			1		1
segment[4]		1		1	1	1		1		1
segment[5]		1	1	1				1		
segment[6]	1	1						1		

*note, on Altera Seven Segment Displays, they are common cathode, thus driving a segment to "1" will turn it off, and driving it to "0" will turn it on

**note, only added high "1" values for ease of reading, didn't add low "0" values, but you will have to do this in your verilog code.

Example of Segment 1, and when it needs to be high "1" to display all of the digits (0-9)

	Digit 0	Digit 1	Digit 2	Digit 3	Digit 4	Digit 5	Digit 6	Digit 7	Digit 8	Digit 9
segment[1]						1	1			

	Digit 5	Digit 6
segment[1]	1	1

```
assign segment[1] = (~C[3]&C[2]&~C[1]&C[0])|(~C[3]&C[2]&C[1]&~C[0]);
//0101 OR 0110
```