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2421 A3 DL_Programming Experiment

Report

**Requirement 1:.The truth table in subtask two and the functions**

**relating the output $Sj$ and the input $E_0$ $E_1$ $E_2$.**

Truth Table Subtask 2

| Input | | | Output | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| $E_0$ | $E_1$ | $E_2$ | $S_1$ | $S_2$ | $S_3$ | $S_4$ | $S_5$ | $S_6$ | $S_7$ |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 |
| 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 |

Function relating the output $Sj$ and the input $E0E1E2$.

S1=f(E0E1E2)= E0'E1E2' + E0E1E2' + E0'E1'E2 + E0E1'E2 + E0'E1E2

S2=f(E0E1E2)= E0'E1'E2' + E0'E1'E2 + E0'E1E2 + E0E1'E2

S3=f(E0E1E2)= E0'E1'E2' + E0'E1E2' + E0E1E2' + E0E1'E2+ E0'E1E2+

$+E0E1E2$

$= E0E2 + E1 + E0'E2'$

$S4=f(E0E1E2)= E0'E1'E2' + E0E1'E2' + E0'E1E2' + E0E1E2' + E0'E1'E2$
$+ E0E1E2$

$S5=f(E0E1E2)= E0'E1'E2' + E0'E1E2' + E0'E1E2$
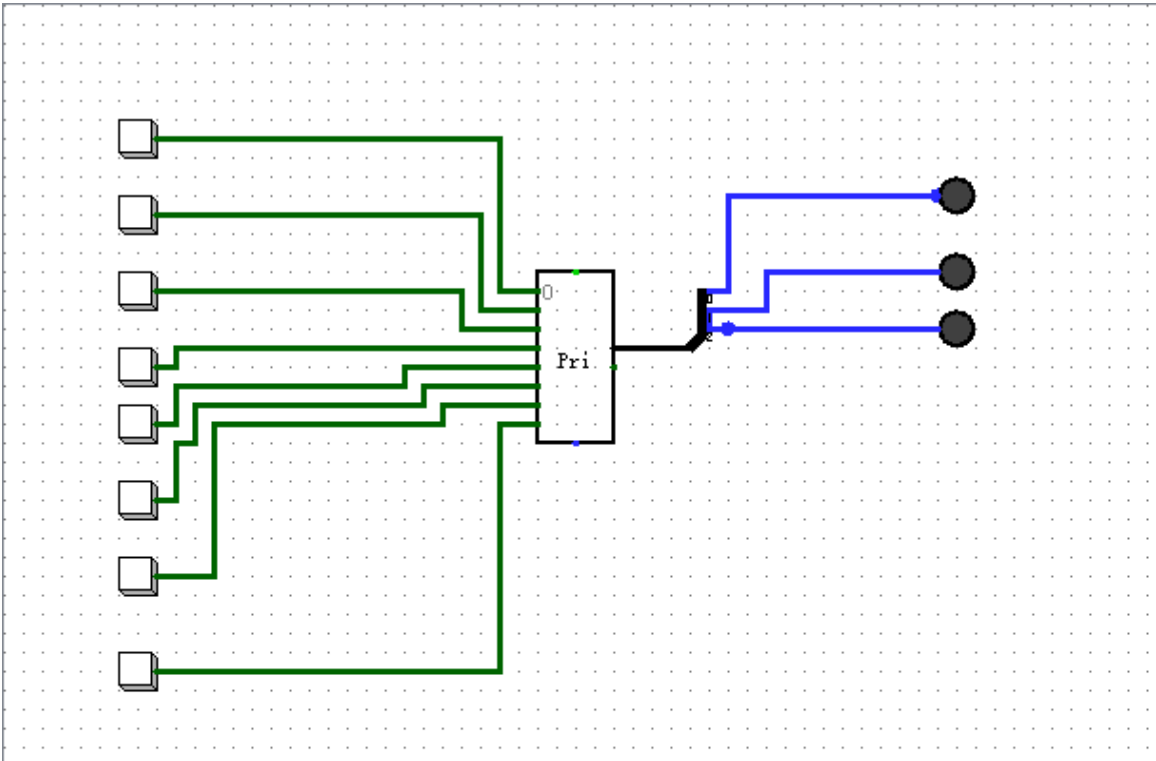
$S6=f(E0E1E2)= E0'E1'E2' + E0'E1E2' + E0E1E2' + E0E1'E2 + E0'E1E2$

$S7=f(E0E1E2)= E0'E1'E2' + E0E1'E2' + E0E1E2' + E0'E1'E2 + E0E1'E2+$
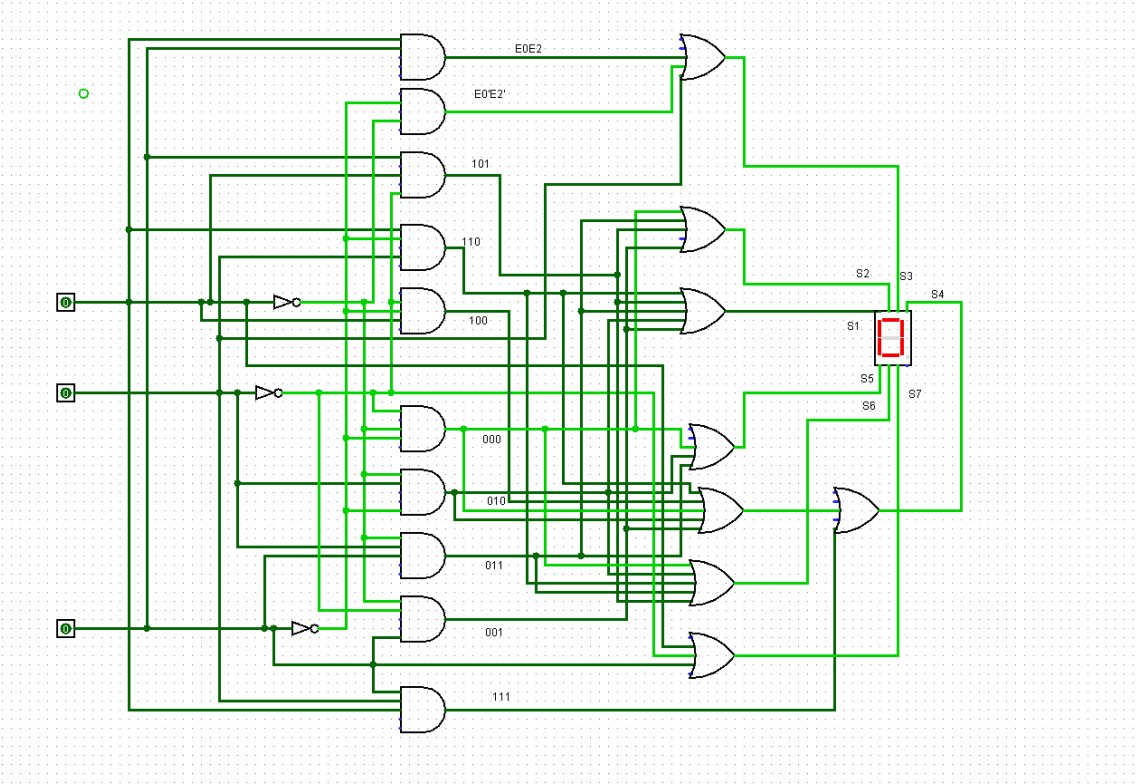$E0'E1E2+ E0E1E2$
$= E0+E1'+ E2$

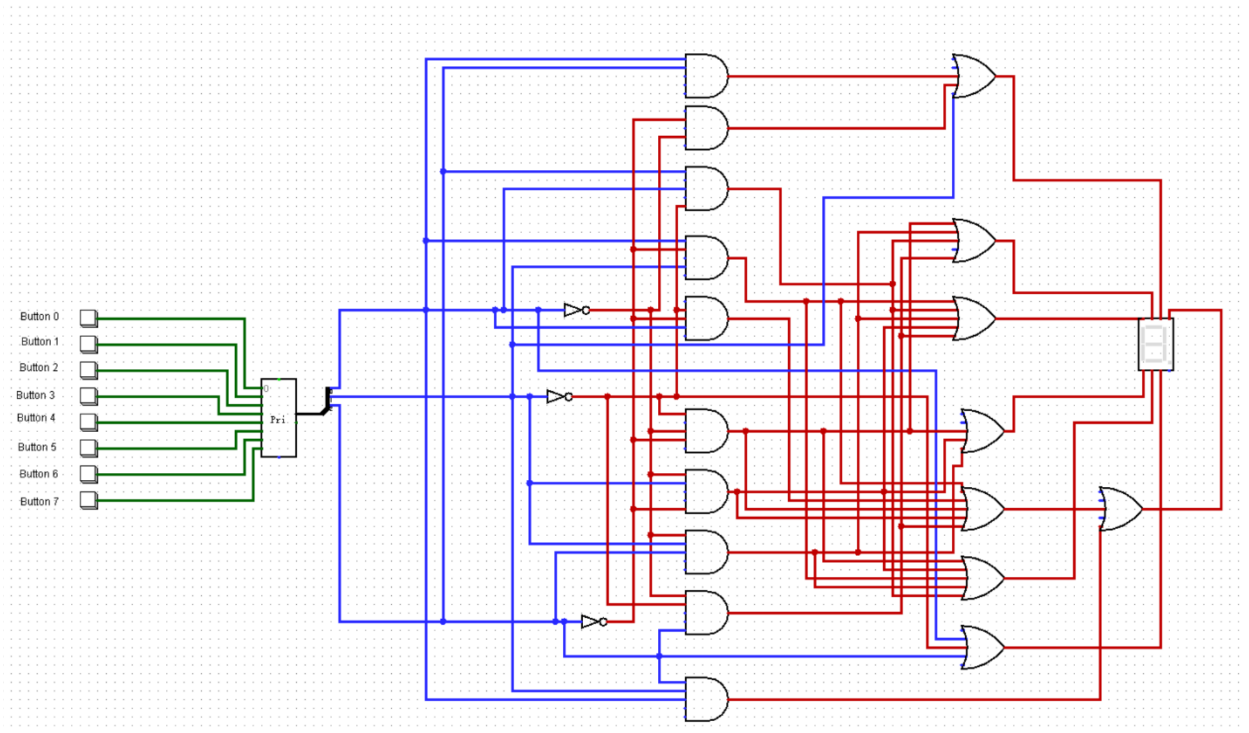# Requirement 2: Screen shot of the three circuits in three subtasks.

## Subtask 1:



## Subtask 2:

Subtask 3:

Button 0
Button 1
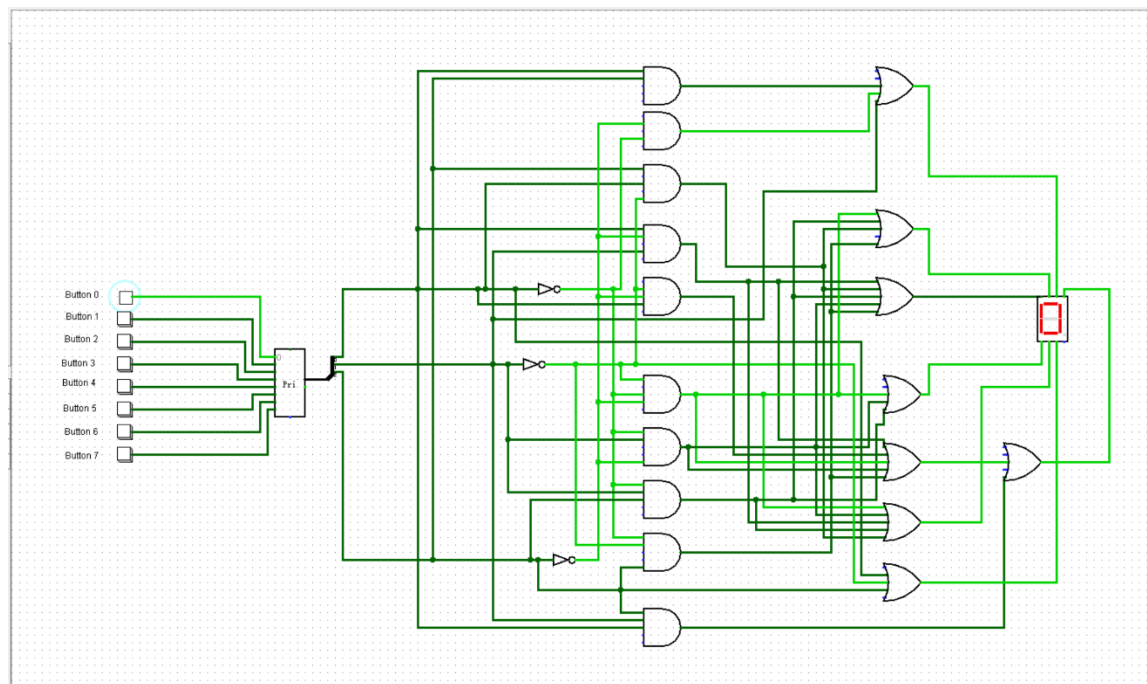Button 2
Button 3
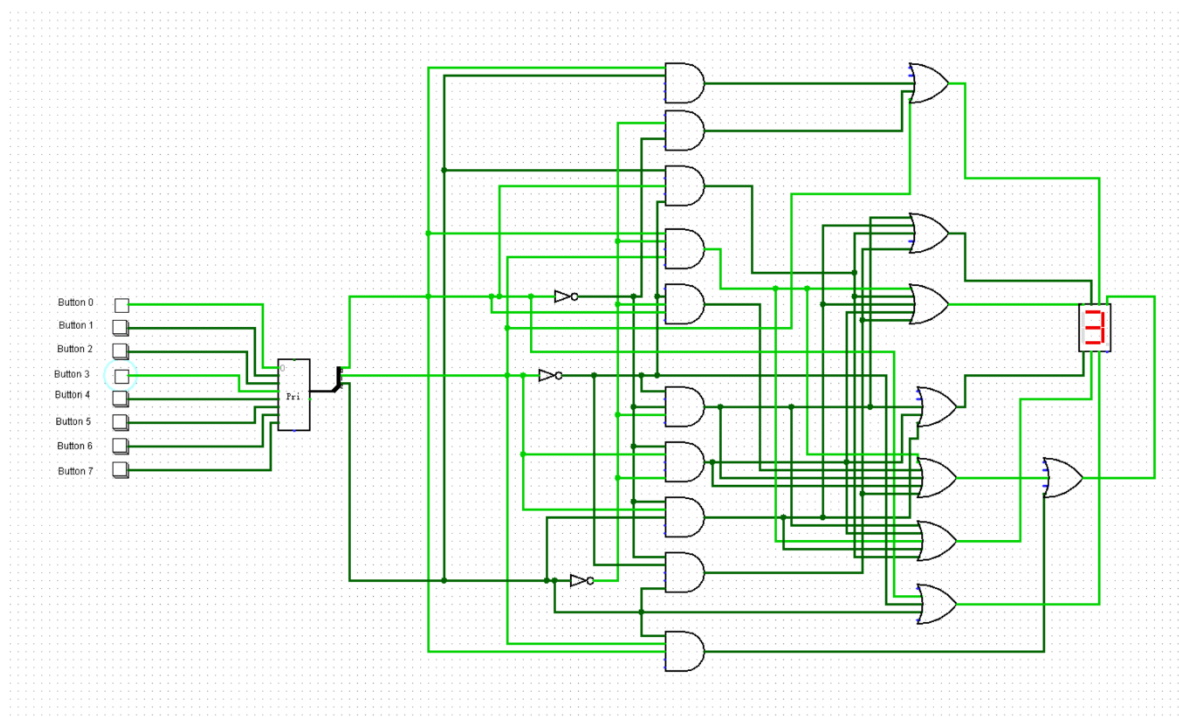Button 4
Button 5
Button 6
Button 7

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**Requirement 3: Three pictures. In each picture, you should show that when button $i$ is pressed, the digit $i$ is shown in the 7-Segment display (Select three cases as you wish).**

When 0 is pressed, digit 0 is shown in 7-segment display:



When 3 is pressed, digit 3 is shown in 7-segment display:

When 6 is pressed, digit 6 is shown in 7-segment display: