**Lab 2 Specification**

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4/20/2016

**Truth Table for Function F:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Mod 8 result | CURRENT | | | NEXT | | |
| Clk |  | X2 | X1 | X0 | Y2 | Y1 | Y0 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 1 | 5 | 1 | 0 | 1 | 0 | 1 | 0 |
| 2 | 2 | 0 | 1 | 0 | 1 | 1 | 1 |
| 3 | 7 | 1 | 1 | 1 | 1 | 0 | 0 |
| 4 | 4 | 1 | 0 | 0 | 0 | 0 | 1 |
| 5 | 1 | 0 | 0 | 1 | 1 | 1 | 0 |
| 6 | 6 | 1 | 1 | 0 | 0 | 1 | 1 |
| 7 | 3 | 0 | 1 | 1 | 0 | 0 | 0 |

**sum of products:**

Y2 = X2' X1' X0' + X2' X1' X0 + X2' X1 X0' + X2 X1 X0;

Y1 = X2' X1' X0 + X2' X1 X0' + X2 X1' X0 + X2 X1 X0';

Y0 = X2' X1' X0' + X2' X1 X0' + X2 X1' X0' + X2 X1 X0';

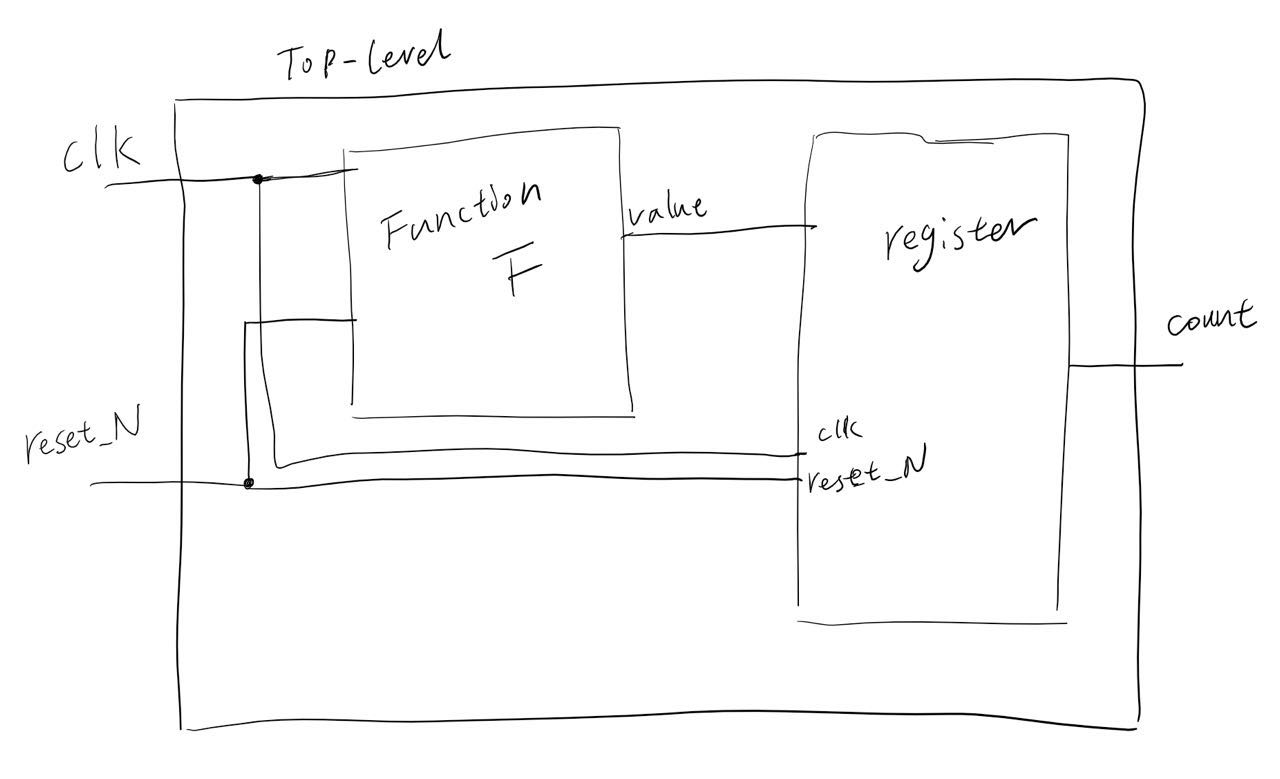
**Simplify:**

Y2 = X2 X1 X0 + X2' X0' + X2' X1';

Y1 = X1 X0' + X1' X0;

Y0 = X0';

**Diagram:**

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