# 

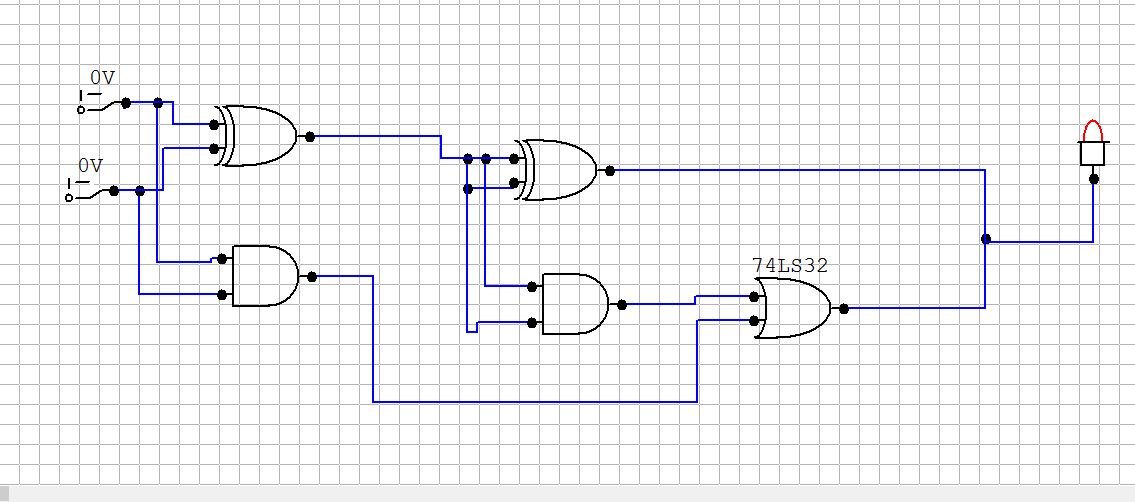
2-BIT ADDER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **A** | **B** | **CIN** | **S** | **COUT** |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 1 | 1 |

**SOP EXPRESSION USING KMAP :**

**BC+AC**

**The Boolean expression would be   
S = ((A xor B) xor Cin) ;   
Cout = ((A xor B) and Cin) or (A and B) ;**

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