

## Pass Logic

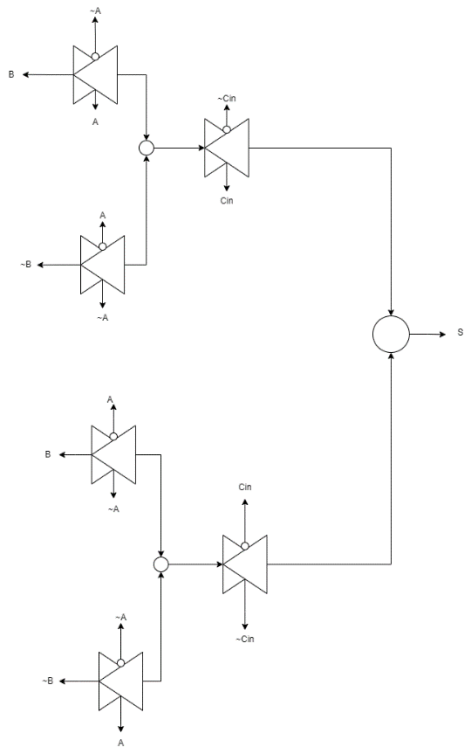
### Shannon Expansion

$$S = C_{in} \cdot (\sim A \cdot \sim B + A \cdot B) + \sim C_{in} \cdot (\sim A \cdot B + A \cdot \sim B)$$

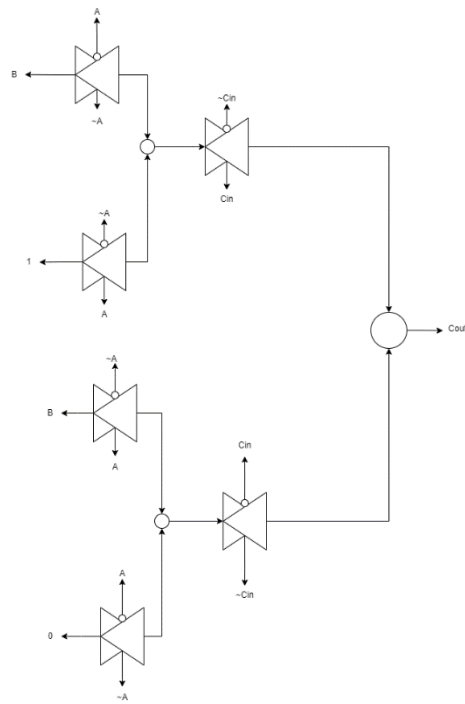
$$C_{out} = C_{in} \cdot (A \cdot 1 + \sim A \cdot B) + \sim C_{in} \cdot (A \cdot B + \sim A \cdot 0)$$

### Transmission Gates S and Cout

**S**



**Cout**



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