






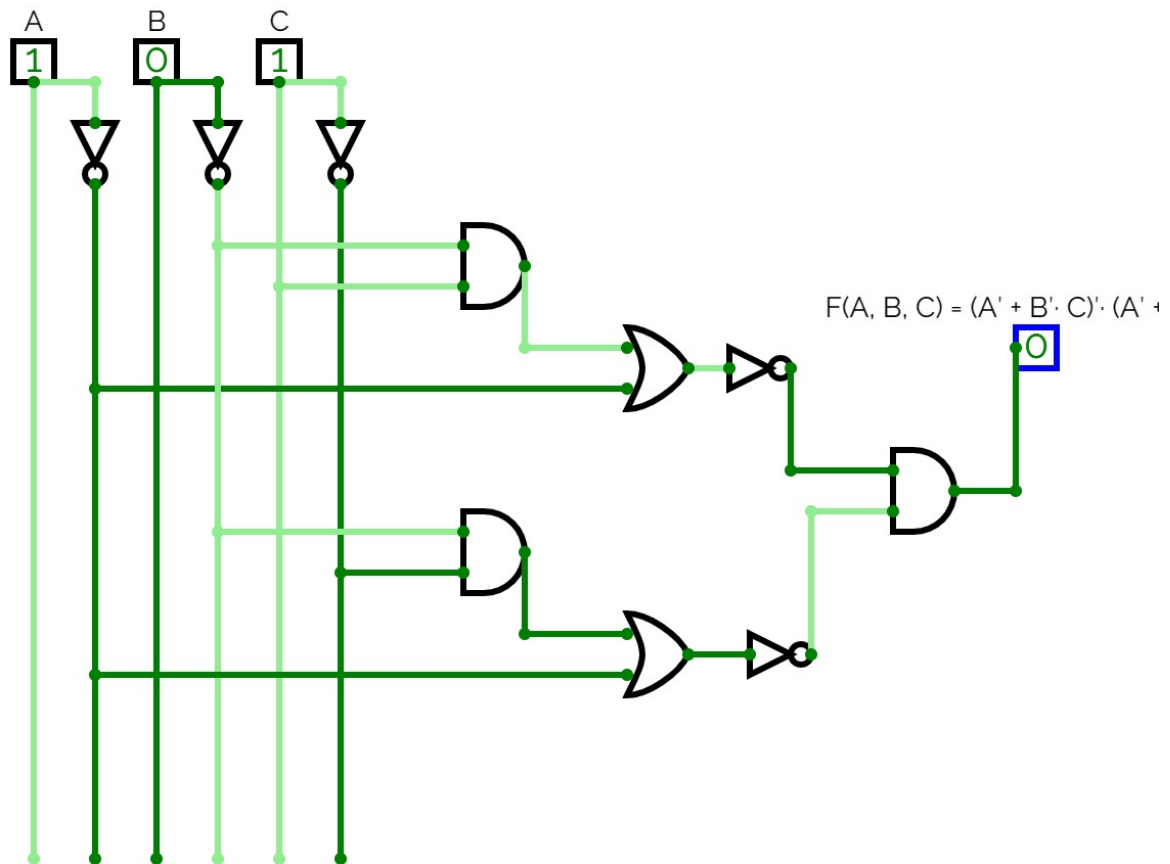
PreLab 2 - Worked

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 Type	Prelab
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3.1 Simplification using DeMorgan's Theorems

$$F(A, B, C) = (A' + B' \cdot C)' \cdot (A' + B' \cdot C')'$$

Diagram for $F(A, B, C) = (A' + B' \cdot C)' \cdot (A' + B' \cdot C')'$



3.2 Boolean Simplification

Boolean Simplification for F is

- $F = (W' \cdot X' \cdot Y') + (W \cdot X' \cdot Y') + (W' \cdot X' \cdot Z)$
1. Create an SV file named “**functionWXYZ.sv**” that contains one SV module named functionWXYZ. Write structural SV using the built-in logic gate modules to describe the operation of the circuit you created. Label any logic wires required.

Simplifying the expression obtained

1. Simplify the expression you obtained above, using Boolean theorems. You should list the theorem (or axiom) used in each step. Draw a logic diagram for the simplified expression.

- $F = (W' \cdot X' \cdot Y') + (W \cdot X' \cdot Y') + (W' \cdot X' \cdot Z)$
- $F = (X' \cdot Y' (W' + W)) + (W' \cdot X' \cdot Z)$
- $F = X' \cdot Y' + (W' \cdot X' \cdot Z)$
- $F = X' (Y' + W' \cdot Z)$

Diagram is on attached paper
