Computer Architecture

Tutorial - 02

Answer all questions.

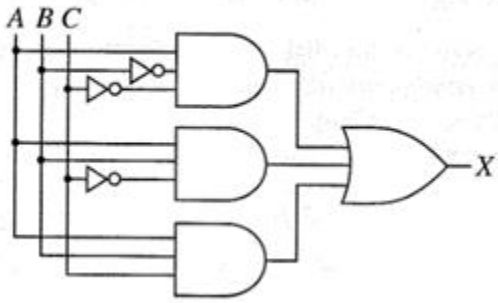
01. Imagine you have two inputs A and B, and you want to design a logic circuit that outputs a 1 if and only if:

    - A is a 0, and B is a 1, or
    - A is a 1, and B is a 0.

    Which logic gates would you use to create this circuit?

02. Draw the truth table for the following circuit.

Consider the logic circuit shown in the figure, in which A, B and C are the inputs and X is the output.



03. Draw the truth table and the logic circuit.

Description:

An alert will be displayed when certain conditions occur in a nuclear reactor.

Conditions:

The output, X, of a logic circuit that drives the display of the alert must have a value of 1 when either one of the conditions is met:

- carbon dioxide pressure too low and temperature > 300°C
- water pressure > 10 bar and temperature > 300°C