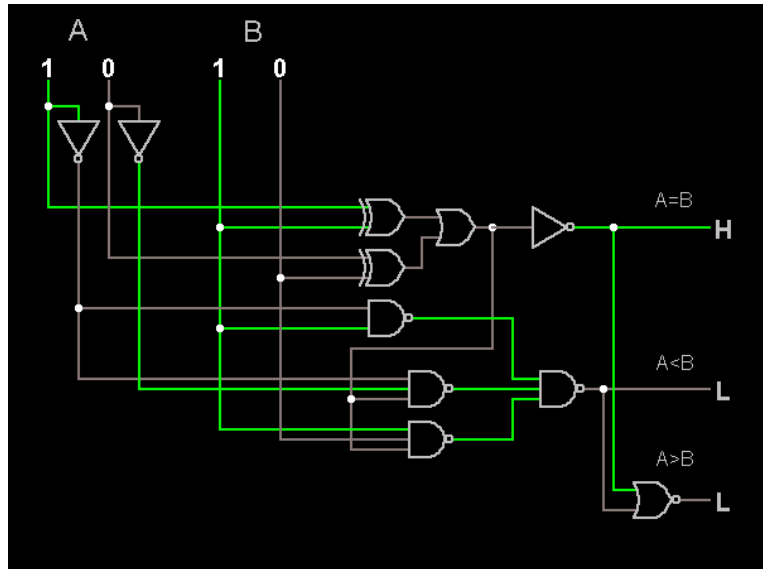# GST 108: Introduction to Quantitative Reasoning

Nnadiukwu Miracle

2021 - 11 - 18

LOGIC GATES

A logic gate is a building block of a digital circuit which is at the heart of any computer operation.

LOGIC GATES

Behind every digital system is a logic gate.

LOGIC GATES

Logic gates perform logical operations that take binary input (0s and 1s) and produce a single binary output. They are used in most electronic device including :

Smartphones   Tablets   Memory devices

LOGIC GATES

Now think of a logic gate like a light switch, it is either in an ON or OFF position. Similarly, the input output terminals are always in one of two binary positions false(0) and true(1). Each gate has its own logic or set of rules that determines how it acts based on multiple inputs outlined in a truth table.

LOGIC GATES

Combining 10s, 1000s or millions of logic gates makes it possible for a computer to perform highly complex operations and tasks at ever increasing speeds.

LOGIC GATES

A gate is a basic electronic circuit which operates on one or more signals to produce an output signal.

Logic gates are digital circuits constructed from diodes, transistors, and resistors connected in such a way that the circuit output is the result of a basic logic operation (OR, AND, NOT) performed on the inputs.

TYPES OF LOGIC GATES

Fundamental gates are AND, OR and NOT Derived Gates are NAND, NOR,

NOT   OR   AND
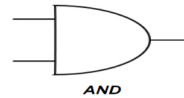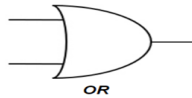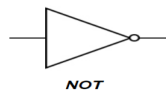
XOR and XNOR (derived from the fundamental gates)