# Logic Gates and its Types

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## Logic Gates and Combinational Circuits

**Introduction to Combinational Circuits:**
- Circuits without memory, output depends only on present inputs.

**Design Procedures of Combinational Circuits:**
- Steps to design combinational logic circuits from a given Boolean function.

**Adders and Subtractors:**
- **Half Adder** and **Full Adder**: Performs binary addition.
- **Half Subtractor** and **Full Subtractor**: Performs binary subtraction.

**Binary Parallel Adder:**
- Adds multiple binary digits simultaneously.

**BCD Adder:**
- Adds Binary-Coded Decimal (BCD) numbers.

**Carry Look-Ahead Adder:**
- Faster addition technique reducing propagation delay.

**Decoder and Encoder:**
- **Decoder**: Converts binary inputs into unique outputs.
- **Encoder**: Converts multiple inputs into a coded output.

**Priority Encoder:**
- Encodes input with priority assigned.

**Multiplexer (MUX):**
- Selects one input from multiple inputs based on select lines.