

# Assignment 2

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25 Sep 2023

## Problem 1

$$F(A, B, C, D) = \sum m(0, 2, 3, 8, 9, 10, 11, 12, 13, 14, 15)$$

1. Simplify F using Karnaugh Maps.
2. Construct truth table.
3. Draw the circuit.
4. Design a *Structural module* for this circuit (Using Verilog)

## Promblem 2 : Design a 4-to-1 Multiplexer

1. Construct truth table.
2. Determine output function.
3. Draw the circuit.
4. Design a *Structural module* for this circuit (Using Verilog)

## Promblem 3 : Adder Circuit

For each of the following circuit, Construct truth table, Determine the output function and Write Verilog code

1. Half Adder
2. Full Adder
3. Ripple Carry 4-bit Adder
4. Ripple Carry 16-bit Adder