



MULTIPLIER CIRCUIT

COMBINATIONAL LOGIC CIRCUITS

prepared by:

Gyro A. Madrona
Electronics Engineer

TOPIC OUTLINE

Multiplier Circuit



MULTIPLIER CIRCUIT



MULTIPLICATION

Decimal Multiplication

$$\begin{array}{r} 8 \text{ Multiplicand} \\ \times 3 \text{ Multiplier} \\ \hline 24 \text{ Product} \end{array}$$

Binary Multiplication

$$\begin{array}{r} 1000 \text{ Multiplicand} \\ \times 0011 \text{ Multiplier} \\ \hline 1000 \text{ Partial product 0} \\ + 1000 \text{ Partial product 1} \\ \hline 11000 \text{ Product} \end{array}$$



EXERCISE

Create a block-level representation of a 2-bit binary multiplier.

Solution



EXERCISE

Synthesize and implement a 2-bit parallel binary multiplier.

note

The use of XOR or XNOR gates is not allowed.

Solution



LABORATORY

