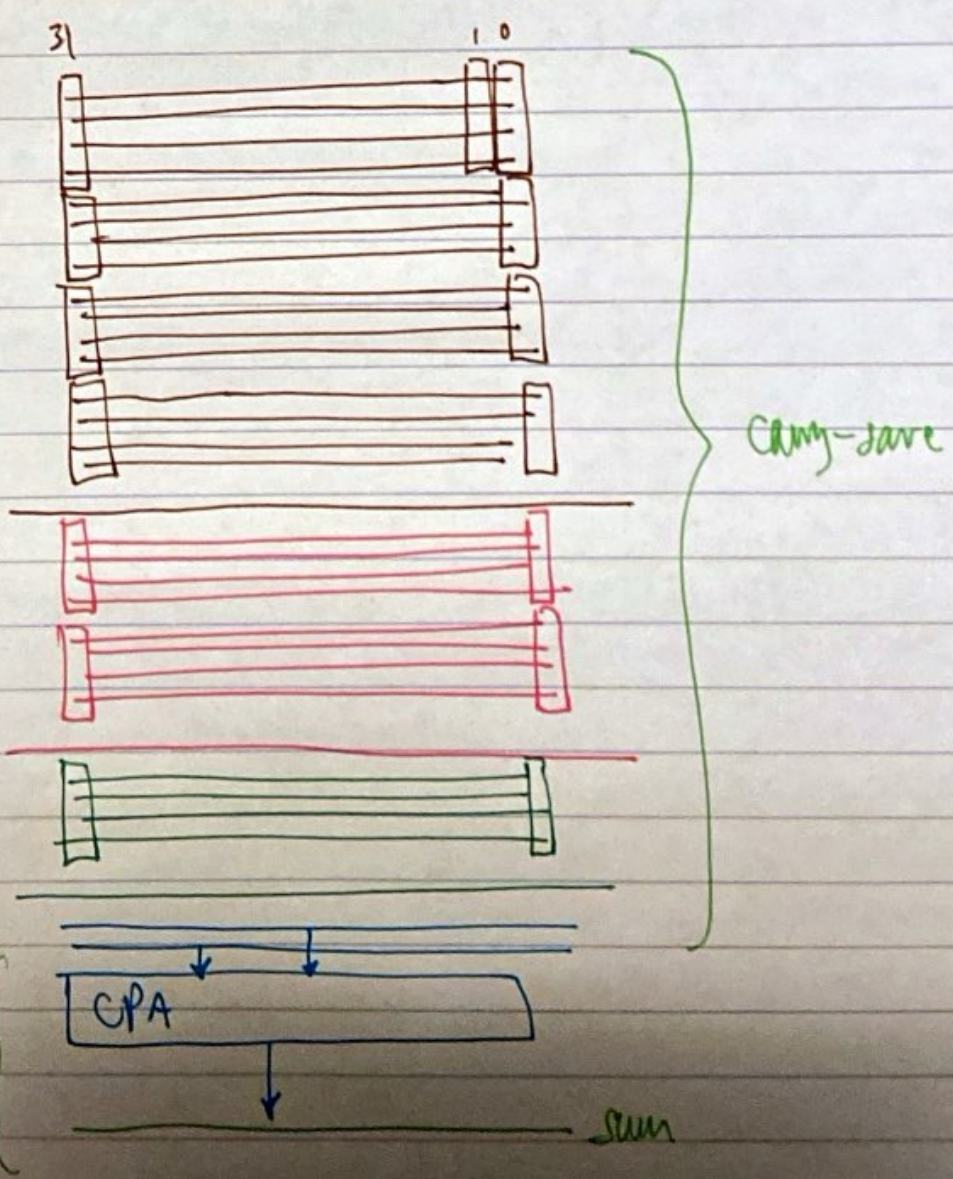
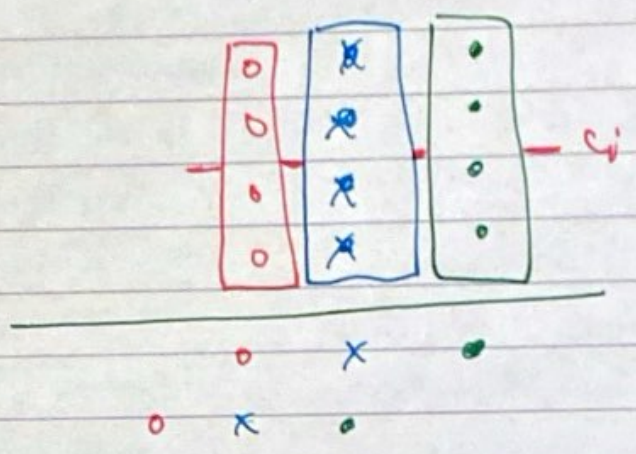


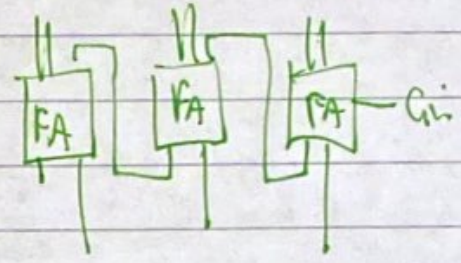
EEC 281

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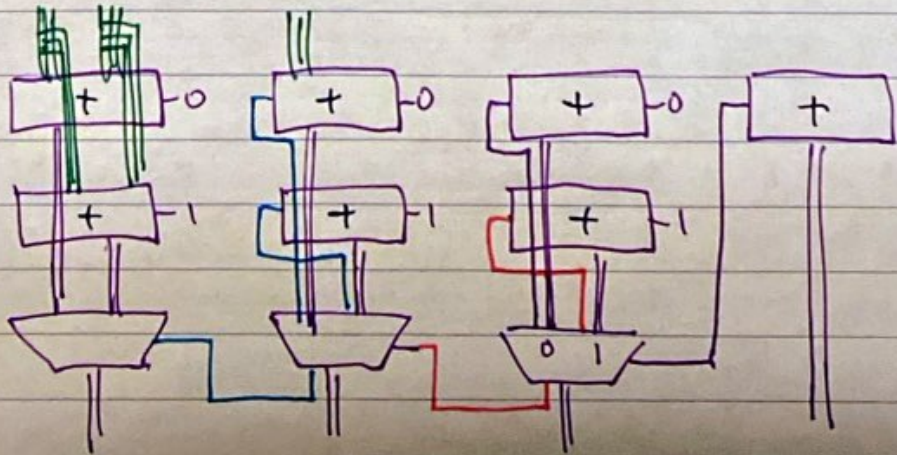
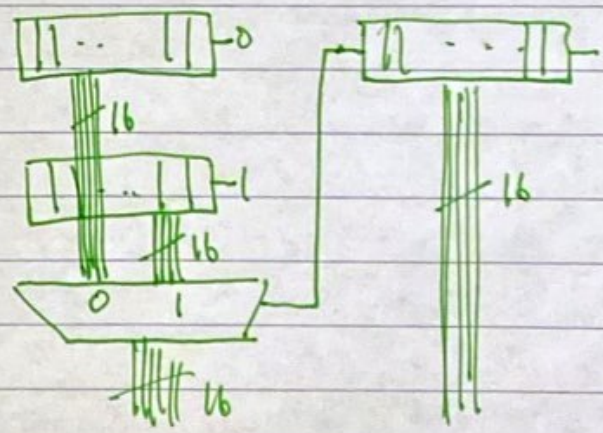
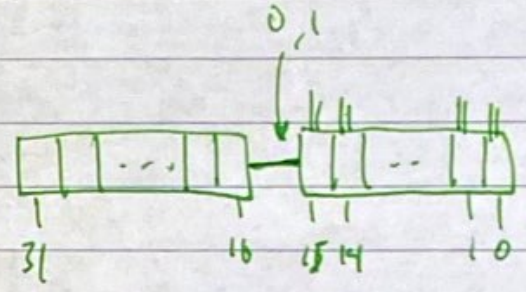


Faster CPA's

- o) Rripple Carry
 - slowest CPA
 - smallest CPA
 - simplest CPA

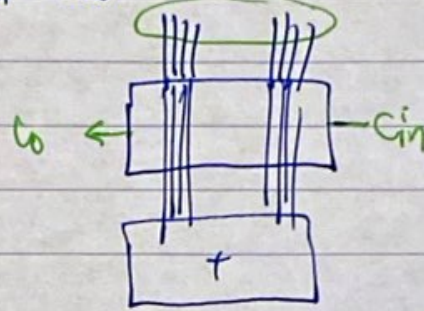


1) Carry-select



Can also build hierarchically

2) Carry-lookahead Adder A B



a) Based only on inputs, will C_o be 1? (Generate)

$$\begin{array}{r}
 \text{Cin} \\
 1000 = A \\
 + 1101 = B \\
 \hline
 \text{Co} \\
 = 1
 \end{array}$$

b) Based only on inputs, will C_{in} propagate to C_o (Propagate)

$$\begin{array}{l}
 \text{If propagate} = 1, \quad C_{in} = 0 \rightarrow C_o = 0 \\
 \quad \quad \quad \quad \quad \quad C_{in} = 1 \rightarrow C_o = 1
 \end{array}$$

$C_o = \text{Generate OR (Propagate \& } C_{in})$

