Ripple Carry Adder

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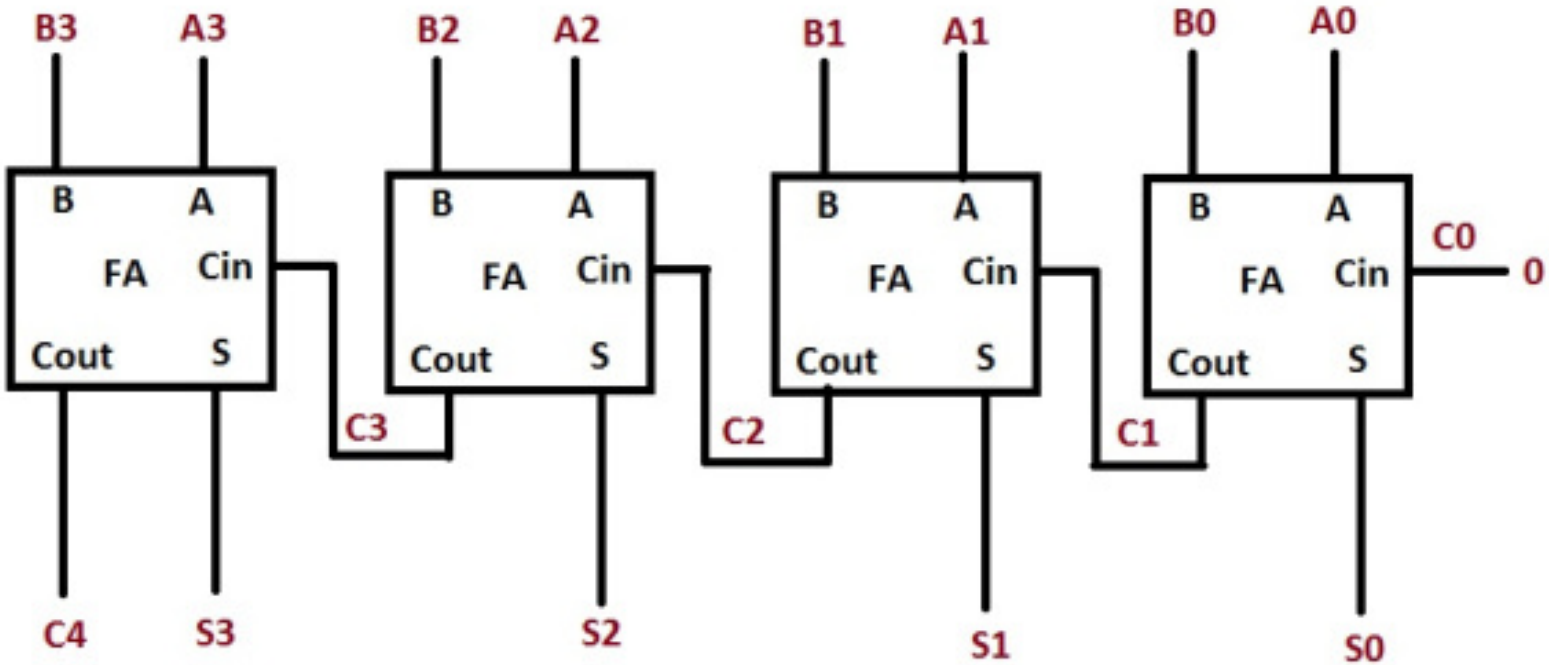
Introduction

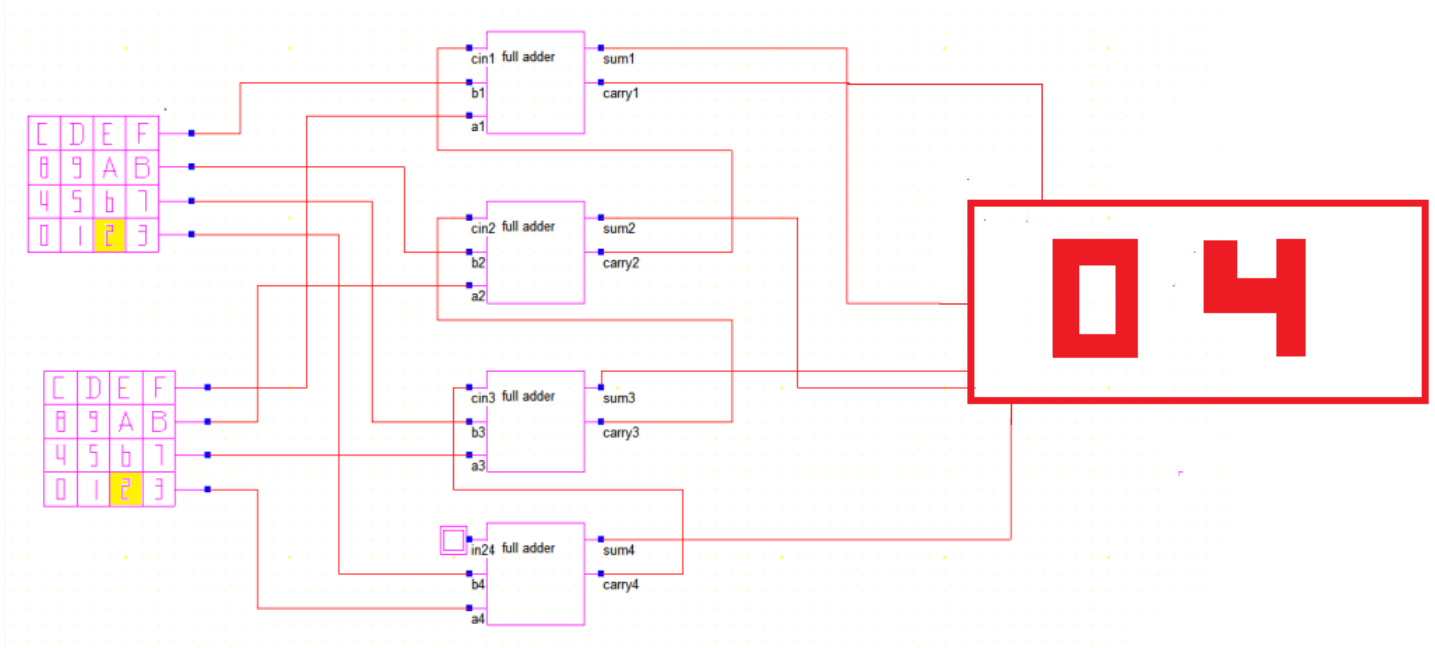
- One ripple carry adder consists of four full adders.
- Performs arithmetic sum of two binary numbers.
- All full adders are cascaded with carry output of one connected to the carry input of another.
- Multiple full adders can be cascaded to perform N-bit addition.
- Suitable for small bit applications.

A 4 BIT RIPPLE CARRY ADDER



FA - Full Adders
B - Data 2
C - Carry

A - Data 1
S - Sum


C D E F
8 9 A B
4 5 6 7
0 1 2 3
C D E F
8 9 A B
4 5 6 7
0 1 2 3
cin1 full adder
b1
a1
sum1
carry1
cin2 full adder
b2
a2
sum2
carry2
cin3 full adder
b3
a3
sum3
carry3
in24 full adder
b4
a4
sum4
carry4
0 4

Uses:

- Various mathematical operations can be performed like addition,subtraction etc.
- Used in ALU of various processors like ARM1.