Structure, delay and speed

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|  | 4-bit Full Adder | 4-bit Carry Look Ahead Adder |
| Circuit |  | Carry-lookahead adder - Wikipedia |
| Structure | + Including n full adders connecting in series  + Each full adder has to wait for its carry-in from its prev stage full adder  + Thus, n th full adder has to wait until all (n – 1) full adders have completed their operations | + The carry-in of any full adder is independent of the carry bits generated during intermediate stages  + Known carry-in provided at the beginning and bits being added in the prev stages. Which enables the ability to evaluate the carry-in of any stages at the instant of time  + No need for waiting the carry-in generated by its prev stage full adder |
| Delay | High delay as n increases | Low delay |
| Speed | Extremely slow as n increases | Faster than 4-bit Full adder |