# BCDADD

## Functional Specs

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## State Diagram

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## Validation

In order to test, validate and debug the bcdadd routine, a wrapper subroutine that includes test cases covering all possible scenarios in the state diagram was written.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Case Number | Case | R0 | | | R1 | | | Condition |  |
|  |  | Sign | Value | Hex | Sign | Value | Hex |  |  |
| 1 | R0+, R1+ | + |  | 0x00762500 | + |  | 0x00309380 |  |  |
| 2 | R0-, R1- | - |  | 0x80039785 | - |  | 0x80139962 |  |  |
| 3a | r0+, r1- | + |  |  | - |  |  | (|ro|>|r1|) |  |
| 3b | r0+, r1- | + |  |  | - |  |  | (|ro|<|r1|) |  |
| 3c | r0+, r1- | + |  |  | - |  |  | (|ro|=|r1|) |  |
| 4a | r0-, r1+ | - |  |  | + |  |  | (|ro|>|r1|) |  |
| 4b | r0-, r1+ | - |  |  | + |  |  | (|ro|<|r1|) |  |
| 4c | r0-, r1+ | - |  |  | + |  |  | (|ro|=|r1|) |  |
| 5 | r0 , r1 | - |  |  | + |  |  | R0 overflown |  |

## Performance

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# Babbage

## Functional Specs

the prototype of the babbage function is:

void babbage(unsigned int PolyOrder, unsigned int NumItems, bcd\_t\* Elements)

where the type bcd\_t is defined to be: unsigned long

## Algorithm

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## Validation

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## Performance

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# Appendix