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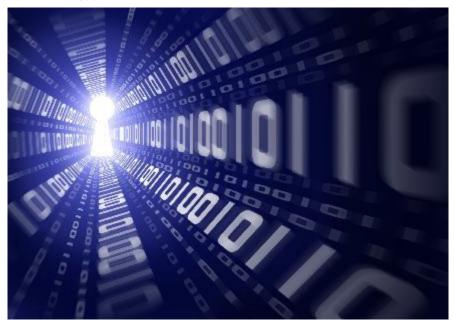
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Bit Manipulation Interview Questions and Practice Problems



Coding Freak

Oct 13, 2018 · 2 min read



Bit manipulation is the act of algorithmically manipulating bits. Computer programming tasks that require bit manipulation include low-level device control, error detection and correction algorithms, data compression, encryption algorithms, and optimization. For most other tasks, modern programming languages allow the programmer to work directly with abstractions instead of bits that represent those abstractions. Source code that does bit manipulation makes use of the bitwise operations: AND, OR, XOR, NOT, and bit shifts. Bit manipulation, in some cases, can obviate or reduce the need to loop over a data structure and can give many-fold speed ups, as bit manipulations are processed in parallel, but the code can become more difficult to write and maintain.

In this post, we will discuss few such interesting bit manipulation hacks and interview questions -

- 1. Bit Hacks Part 1 (Basic)
- 2. Bit Hacks Part 2 (Playing with k'th bit)
- 3. Bit Hacks Part 3 (Playing with rightmost set bit of a number)
- 4. Bit Hacks Part 4 (Playing with letters of English alphabet)
- 5. Bit Hacks Part 5 (Find absolute value of an integer without branching)
- 6. Bit Hacks Part 6 (Random Problems)
- 7. Brian Kernighan's Algorithm to count set bits in an integer
- 8. Compute parity of a number using lookup table
- 9. Count set bits using lookup table
- 10. Find the minimum or maximum of two integers without using branching

- 14. Swap muividuai bits at given position in an integer
- 15. Check if given number is power of 4 or not
- 16. Reverse Bits of a given Integer
- 17. Find odd occurring element in an array in single traversal
- 18. Find two odd occurring element in an array without using any extra space
- 19. Swap two bits at given position in an integer
- 20. Add binary representation of two integers
- 21. Swap Adjacent Bits of a Number
- 22. Print all distinct Subsets of a given Set
- 23. Perform Division of two numbers without using division operator (/)
- 24. Check if adjacent bits are set in binary representation of a given number
- 25. Conditionally negate a value without branching
- 26. Find two duplicate elements in an limited range array (using XOR)
- 27. Find missing number and duplicate elements in an array
- 28. Check if given number is power of 8 or not
- 29. Circular shift on binary representation of an integer by k positions
- 30. Solve given set of problems without using multiplication or division operators
- 31. Reverse Bits of an integer using lookup table
- 32. Generate binary numbers between 1 to N
- 33. Efficiently implement power function | Recursive and Iterative
- 34. Find square of a number without using multiplication and division operator
- 35. Generate power set of a given set
- 36. Find all odd occurring elements in an array having limited range of elements **Thank you.**

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20 claps









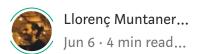
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