

The questions below are actual questions that were asked by Microsoft interviewers. Some are just plain puzzles and some are programming, software questions. You better know how to program C/C++ **and NOT JAVA!**

Best of luck solving these. I am not held responsible for loss of life!

Puzzles

1. If a bear walks one mile south, turns left and walks one mile to the east and then turns left again and walks one mile north and arrives at its original position, what is the color of the bear.
2. You are a bus driver. At one stop, 15 people get on while 5 get off. At the next stop, 10 more get on while 2 get off. What color is the bus drivers eyes?

Algorithms

3. Give a very good method to count the number of ones in a "n" (e.g. 32) bit number.
4. Give a fast way to multiply a number by 7.
5. Given an array t[100] which contains numbers between 1..99. Return the duplicated value. Try both $O(n)$ and $O(n\text{-square})$.
6. Write, efficient code for extracting unique elements from a sorted list of array. e.g. (1, 1, 3, 3, 3, 5, 5, 5, 9, 9, 9, 9) -> (1, 3, 5, 9).

Data Structures / Programming

7. Delete an element from a doubly linked list.
8. How is the readers-writers problem solved? - using semaphores/ada .. etc.
9. Given an array of length N containing integers between 1 and N, determine if it contains any duplicates.
10. Declare a void pointer

11.
`int *a; char *c;
*(a) = 32;
*c = *a;
printf("%c",*c);`

What is the output?