

Guidelines for 520 Questions in the CS MS Comprehensive Exam

Use C++ wherever applicable in the answers of the following:

Create a linear linked list from a given collection of data (e.g. from an array).

1. Create a linear linked list from a given collection of data (e.g. from an array).
2. Given a linear linked list, traverse the linked list and delete nodes with a specified condition.
3. Given the specifications for an application (e.g. frequent search), identify which data structure would be the best fit (e.g. stack, queue, tree); and explain time and memory space usage based on the choice of structure.
4. Write code that identifies and uses the most appropriate data structure (stack, queue, tree) in solving a given problem.
5. Write code that performs specified tasks on given stacks using methods defined on stacks.
6. Write code that performs specified tasks on queues using methods defined on queues.
7. Write code that performs specified tasks on a tree based on the given node structure of the tree.
8. Trace mergesort on a given array. Show partial results after merge steps and number of comparisons performed in each merge.