CS 260 Class Objectives

Week One

Describe the purpose of this class and the general outcomes for the course.

Describe "Time Complexity" and "Space Complexity."

Define "Data Type."

Define "Abstract Data Type (ADT)" and "Data Structure."

Describe how ADT differs from data structure.

Week Two

Provide definition and specifications for ADT "List."

Demonstrate how to implement ADT "List" using an array.

Describe how to construct a node for dynamic memory allocation.

Demonstrate a linked-list (pointer) implementation of ADT "List."

Compare time and space complexity of the array list and linked list operations.

Given a scenario calling for a list, indicate whether array or pointer implementation would be better, and describe why.

Week Three

Demonstrate how to implement ADT "List" using a doubly-linked list.
(Pay particular attention to insert and delete operations)

Discuss the relative costs and benefits of using singly-linked and doubly-linked lists.

Describe how to achieve some advantages of using pointers in a special array implementation of ADT "List" (The *cursor* implementation).

Define a special list type, "Ordered List," and show how its operations differ from a general list.

Define ADT "Queue."

Week Four

Demonstrate how to implement ADT "Queue" using an array.

Demonstrate how to implement ADT "Queue" using pointers.

Define ADT "Stack."

Implement ADT "Stack" using arrays and using pointers.

Use stacks and queues to solve simple problems.

Week Five

Catch-up Activities, Midterm exam preparation