

Today - Lecture 18 - CS162

1) Review for the final exam

Rules

- closed book, closed notes
- 1hr 50min
- bring picture ID

When

- Inclass (section 001) - Thursday March 22
10:15-12:05 CIN 90
 - Online (section 002) -
Thursday March 22 5:30-7:20
in ASRC 001
- OR
- Friday March 23rd NOON-
1:50
in ASRC 001

Topics To Cover

1) Comprehensive

2) This means: if, logicals, loops (for), arrays
functions (pass by value & reference)

3) structures

4) classes - constructors, destructors, data members
member functions

* 5) Pointers - creating a pointer variable

- allocating memory dynamically (new)

- deallocating the memory (delete)

- pointer arithmetic

* 6) LLL - create, insert, remove, destroy

* 7) Recursion

Practice

1) Allocate memory dynamically (with new) for a movie. Size the memory just right without having prior knowledge

2) Write a Loop using pointer arithmetic to:

a) display all items in an array

b) capitalize all items in an array

c) output just the last character

3) Homework #3



4) Deallocate memory

a) Know when and where to use the `[]`

`delete [] array;` ← pointer to the first element

`delete ptr;` ← Release just the memory that ptr is referencing

LLL Practice

** iteratively & recursively **

- * 1) Add a node to the beginning of a LLL
- * 2) Add a node to the end of a LLL
- 3) Remove a node at the beginning
- * 4) Remove a node at the end
- 5) Remove the last two items
- 6) Remove the first two items
- 7) Display all items
- 8) Display just the last item
- 9) Display all positive values (of a LLL of ints)
- 10) Add together all values (ints) in a LLL of ints
- 11) Count the number of nodes
- * 12) Copy every node & make a duplicate LLL
- 13) Copy every node's data and store it in an array
- 14) Display every other node's data
- 15) Remove all

Iteratively

Special cases

- 1) Empty list (head is NULL)
- 2) Working at the beginning (head gets altered)
- 3) Working elsewhere (need temporary pointers)

Recursively

Stopping conditions

- 1) Pointer is NULL { EMPTY
NOT FOUND
- 2) Any other reason to stop? (match?)
- 3) Otherwise traverse (via recursive call)

Practice Recursion

1. Display all items in reverse order
Display all items
2. Add at end
3. Remove an item
4. Remove all
5. Remove at end