Midterm Exam 1
- Tuesday, October 18, 5:00 pm – 7:00 pm
- Lec 1: room 105 Psychology
- Lec 2: room 272 Bascom Hall
- Lec 3: room 132 Noland Hall
- UW ID required
- See posted Exams page for more information (and link to sample questions doc)
- Email has been sent to those requesting a makeup/accommodation

Homework 5 due 10 pm Tomorrow, Friday, October 14th
Program 2 due 10 pm Sunday, October 23rd – SHOULD BE TESTING

Last Time
Complexity Caveats
Comparing ArrayList vs LinkedList
Shadow Array - improving array resizing
Stack ADT
- concept

Today
Stack ADT
- array implementations
- chain of nodes implementations
Queue ADT (from last time)
- concept
- chain of nodes implementations
Circular Array Data Structure
Tree Terms
Priority Queue ADT
- concept
- operations
- implementation options

Next Time
Exam mechanics
Sample questions solution
Implementing a Queue ADT using Circular Array

Concept

enqueue(item)

dequeue()

expand()
Tree Terminology

1. Which is the root?

2. How many leaves are there?

3. How many nodes are in the right branch/subtree of B?

4. Which is the parent of G?

5. How many children does E have (degree of E)?

6. Which is the sibling of E?

7. How many descendants does B have?

8. What are the ancestors of C?

9. What is the length of the path from B to D?

10. What is the height of the tree?

11. What is the depth/level of J?
Priority Queue ADT

Priorities

Concept

goal:

Operations
## Options for Implementing a Priority Queue ADT

<table>
<thead>
<tr>
<th>data structure</th>
<th>insert</th>
<th>removeMax</th>
</tr>
</thead>
<tbody>
<tr>
<td>unordered array</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ordered array</td>
<td></td>
<td></td>
</tr>
<tr>
<td>unordered chain of nodes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ordered chain of nodes</td>
<td></td>
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</tbody>
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