**Topics**

- Java
- Sorting Algorithms
  - Bubble
  - Insertion
  - Selection
  - Shell
  - Merge
  - Quick
  - Heap
- Efficiency
- Object Orientation
  - Classes & Objects
  - Inheritance
  - Generics
- Recursion
- Arrays & Linked Lists
- Queues & Stacks
- Trees
- Binary Search Trees
  - Auto balancing
- Heaps
- HashTables
  - Chain
  - Open Address
    - Linear
    - Quadratic
    - Double
- Graphs
  - Weighted & Unweighted
  - Directed & Undirected
  - Breadth First Search
  - Depth First Search
  - Dijkstra's Algorithm
  - A*

**Assignments**

1. Sorting 1 - Java, $O(n^2)$ sorting algorithms, objects, efficiency primer
2. Sorting 2 - Efficiency for real, O(nlogn) sorting algorithms, inheritance primer, recursion primer
3. Traveling Salesman - Linked lists, inheritance for real
4. Quack - Writing classes from scratch, unit testing
5. **Test 1** - Java, sorting algorithms, queues & stacks, linked lists & arrays
6. Tag Cloud - Binary search trees, recursion practice
7. Heap - Heaps, more unit testing
8. Hash Table - Hash tables, more unit testing
9. **Test 2** - Trees, heaps and hash tables
10. Maze - Depth first search, breadth first search primer
11. Pathfinding - A*
12. **Test 3** - Graphs
13. PFroomba - Fun? Assimilation? Not sure...

**Schedule**

1. Friday of 1st week.
2. Wednesday of 2nd week.
3. Monday of 3rd week.
4. Monday of 4th week.
5. **Wednesday of 4th week.**
6. Wednesday of 5th week.
7. Monday of 6th week.
8. Monday of 7th week.
9. **Wednesday of 7th week.**
10. Monday of 8th week.
11. Monday of 9th week.
12. **Wednesday of 10th week.**
13. End of finals.