Java Basics

- Chapter 1.1 (Pages 8–35).
- Chapter 1.2 (Pages 64–77, 84–88, 96–99, 107).
- Quick overview of Java tutorials.
  - https://docs.oracle.com/javase/tutorial/java/
- In general, review the basics of OOP and of Java so that you are comfortable reading and writing code.
Analysis of Algorithms

- Chapter 1.4 (Pages 172-205).

- Experimental analysis including doubling hypothesis.

- Mathematical analysis including reviewing (not memorizing) useful approximations of sums.

- Order of growth classifications.

- Review of running time of operations on array lists, linked lists, stacks and queues.
ArrayLists

- Chapter 1.3 (Pages 136-137).
- Textbook API and code.
- Java Oracle API https://docs.oracle.com/javase/8/docs/api/java/util/ArrayList.html
- Amortized and worst-case time analysis.
Singly Linked Lists

- Chapter 1.3 (Pages 142-146).
- Textbook API and code.
- Worst-case time analysis for standard operations.
Doubly Linked Lists

- Chapter 1.3 (Pages 126-157).
- Textbook API and code.
- Java Oracle API.
  - [https://docs.oracle.com/javase/7/docs/api/java/util/LinkedList.html](https://docs.oracle.com/javase/7/docs/api/java/util/LinkedList.html)
- Worst-case time analysis for standard operations.
Stacks, Queues, and Iterators

- Chapter 1.3 (Pages 142-146).
- Textbook API and code for alternative implementations
  - [ResizingArrayQueue.java.html](https://algs4.cs.princeton.edu/code/edu/princeton/cs/algs4/ResizingArrayQueue.java.html)
  - [LinkedQueue.java.html](https://algs4.cs.princeton.edu/code/edu/princeton/cs/algs4/LinkedQueue.java.html)
  - [ResizingArrayStack.java.html](https://algs4.cs.princeton.edu/code/edu/princeton/cs/algs4/ResizingArrayStack.java.html)
  - [LinkedStack.java.html](https://algs4.cs.princeton.edu/code/edu/princeton/cs/algs4/LinkedStack.java.html)
- Java Oracle Iterator and Iterable.
  - [Iterator.html](https://docs.oracle.com/javase/8/docs/api/java/util/Iterator.html)
  - [Iterable.html](https://docs.oracle.com/javase/8/docs/api/java/lang/Iterable.html)
- Worst-case time analysis for standard operations based on the underlying implementation
Practice Exam


Notice that there are slight differences in implementation than our class version.