Midterm Review

- Objects and classes
- Object Interaction
- Collections
- Designing classes
- Testing and Debugging
- Java APIs

Objects and Classes

- Objects
  - What is an object? What is in an object?
  - What is the state of an object?
  - How to communicate with an object?

- Classes
  - What is a class? How is a class different from an object?
  - What are the main components of a class? What is a constructor, accessor, mutator method?
  - What is a class field/method? What is an instance field/method?
Object Interaction

- What is abstraction? What is modularization?
- What is class vs object diagram?
- How to invoke an internal/external method?

Collections

- What is a flexible-size collection? What is a fixed-size collection? What are the differences?
- How to initialize a collection?
- How to iterate through a collection?
- How to add/remove items from a collection?
Designing Classes

- What is coupling? What is cohesion?
- What is responsibility-driven design?
- How to refactor classes to reduce coupling and enhance cohesion?
- How long should a method be? How long should a class be?

Testing and Debugging

- What are the main test strategies?
- What is positive testing? What is negative testing?
- What is regression testing?
- What is JUnit? How to create a test class/method? What is test fixture?
**Java APIs**

- **String**: How to remove beginning and ending spaces? How to parse a string?

- **Boolean, Integer, and other wrapper objects**: How to convert an Integer object to a primitive int, and vice versa? How to convert a String to an Integer object?

- **ArrayList, HashSet, HashMap**: How to add/remove/lookup items? How to determine the # of elements? How to iterate through the items?

- **Other classes**: Enum, Random, and others

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**Questions?**