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## Data Structures and Algorithms for Language Processing Midterm Exam Review

### Coverage

Reading: chapters 1–7.3

HW assignments: 1–7

Labs: 1–8

SelfTests: 1–7

### Main topics

- variables: instance, local, method parameters, scope
- branching statements: if, if-else, multi-branch if-else, switch
- loops: while, for
- boolean expressions
- class definitions: instance variables, methods, constructors
- methods: heading, return type (or void), parameters, overloading, public/private, static/non-static
- encapsulation, UML diagrams, public interface, implementation, javadoc
- differences between variables of a primitive type / class type:
  - in assignment statements
  - as parameters
  - equals and ==
- calling methods:
  - methods calling other methods within the class definition
  - objects calling methods
  - calling static methods from outside the class definition
- arrays:
  - declaring
  - accessing elements
  - arrays as instance variables
  - arrays of objects

## Types of questions

- Short answer (explain something)
- Reading code (e.g. determine the outcome or output of some given code, find the bug in a piece of code)
- Writing code (e.g. write code segment to perform some task, add a method to a class definition, write a class definition)