

Introduction to Arrays in Java

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General Overview

This is a unit for my AP CS A course. We'll be introducing Arrays in Java. The students have already been introduced to classes, control structures, and other elements of the syntax of Java. The course relies on a combination of lecture, in class work, and homework (frequently using CodeHS assignments).

Motivation for Unit

The goal is to provide students with a hands on introduction to arrays and array lists in Java, along with a comparison to Python lists (which they've seen in previous classes).

Standards Referenced

CSTA 11-12th grade standards: 3B-AP-12: Compare and contrast fundamental data structures and their uses.

NY State: 9-12.CT.7

Design or remix a program that utilizes a data structure to maintain changes to related pieces of data.

Tools Used

Java (on CodeHS and replit)

Resources

- [CodeHS arrays unit](#)
- Activities from Summer Hunter Course
- [AP CS A Curriculum guide](#)

Lessons

Total length: 2 Weeks

1. Represent collections of related primitive or object reference data using one-dimensional (1D) array objects
2. Traverse the elements in a 1-D array
3. Practice using array traversal in CodeHS.
4. Traverse the elements in a 1-D array with enhanced for loops

5. Identify some common algorithms that use Arrays
6. Practice solving AP free response problems with common algorithms that use arrays
7. Compare and contrast Java Arrays w/ Python lists. Identify problems with Arrays.
8. Build your own SuperArray class that makes arrays behave like a Python list (Project)
9. Review AP problems involving arrays.
10. Arrays unit test.

Assesments

In class projects: build superArray class.

Assessment: MC and free response question test