

Introduction to Programming II

Arrays in Java

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Department of Computer Science ... University of San Francisco ... p. 17

8-2: Arrays and Collections

- Many times in a program, you will need to have a collection of objects.
 - A list of students
 - A list of test scores
 - A set of data from multiple experiments
 - A collection of shapes to draw
 - etc
- Java has a wide variety of different collection classes.
- We'll start with arrays, and then ArrayLists.
 - Later on, Lists, then Trees and Hashtables.

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8-3: Arrays

- Java provides built-in support for arrays
 - An array is a set of objects that are sequentially arranged in memory.
 - Size of the array is declared when it is created.
- Example:

8-7: Indexing an Array

- One of the most common things to do with an array is loop over it and do something with all the elements.

8-13: In-class exercise, pt 3

- Now, modify your program so that the user can input a minimum and maximum GPA.
- Print out the name and ID of all students whose GPA is between the minimum and maximum.

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8-14: Advantages and disadvantages of arrays

- Advantages:
 - All memory is contiguous
 - Can 'jump' directly to any element of the array.
- Disadvantages:
 - Hard to resize or add elements.

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8-15: Summary

- Arrays let you create a sequential list of objects.
- Need to declare array, and then contents with `new`.
- Can iterate over array or access any element using the index.

Department of Computer Science — University of San Francisco — p. 107