RADFORD UNIVERSITY

ITEC 120

Lecture 39
A GUI Case Study

Review

- GUI Interactivity
  - ActionListener
  - Class design to accommodate

Case study

Objectives

- Post-mortem analysis of a GUI application
- How a non-trivial GUI is made
- Lessons learned
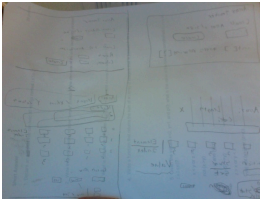- Sample code for your use

Case study

Array Teacher

- Problem
  - How to visualize how arrays work
  - Current Java animations…
- Solution
  - Write my own

Case study

Process

- What did I want???

- What should it look like?
- Five different screen mockups before idea was finalized
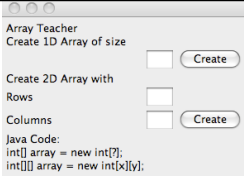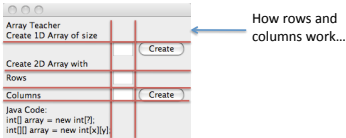
Case study

Process

- Technology
  - WYSIWYG editors
  - Java layouts that I teach
- Read the API documents
  - Grid layout was very similar to what I wanted
- Discovered the GridBagLayout
  - Most powerful layout (by hand)
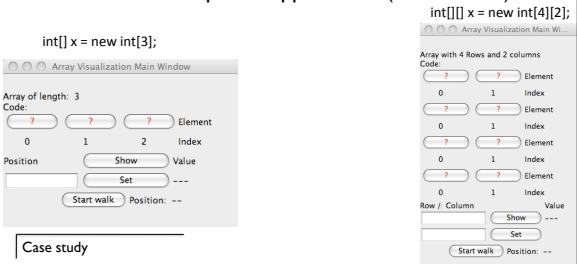 - Row / Column spanning

Case study

Design

- Introductory screen
- Two choices
- Simple JButton / JTextfield interaction
- Layout
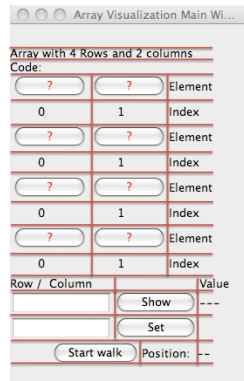 - X,Y coordinates of the different screen

How rows and columns work...

Case study

Main Screen

- Quandary
  - One vs Two separate applications (1D and 2D?)

int[] x = new int[3];

int[][] x = new int[4][2];

Case study

Layout

- Complex
  - Adjust size based on user input

Code

- Examination of how code written
- Warning
  - Not easy to write or read
- **38** different panels / buttons / labels / text fields
- Variable names
- Placement
- Interaction

Notice

- How Classes were laid out
- Panels were used
- How interactivity was handled
- How fields / data members were embedded in classes

Summary

- An example of how to build a non-trivial GUI