Programming Languages and Techniques (CIS120)
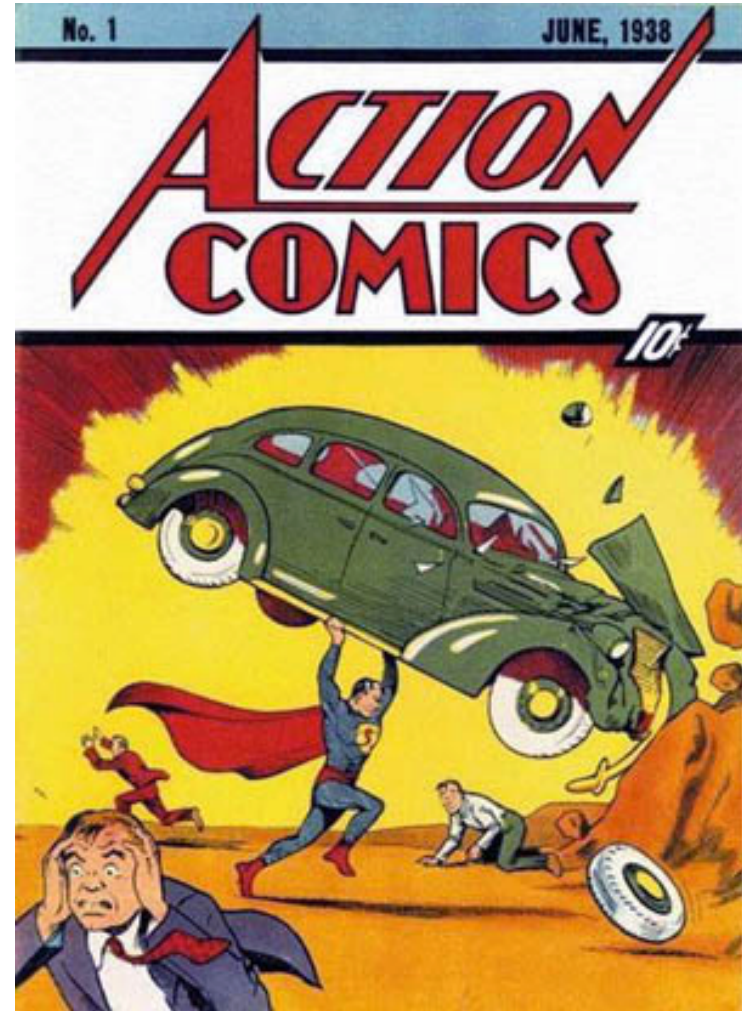
Lecture 23

March 21, 2014

Resizable Arrays

Design Exercise: Resizable Arrays

Arrays that grow without bound.

A Design Problem

Suppose you have a friend who runs a comic book store. She would like some help to keep track of her inventory. In each series, each issue has a number and she would like to know how many copies of that issue she has in stock. However, she does not know how many issues of each series there will be.

Step 1: Understand the Problem

- What are the requirements?

Step 2: Define the interface

What does a "resizable array" type need?

- a way to create an array without specifying an initial size
  - new ResArray();

- a way to access elements of the array
  - a.get(3)   returns the number of copies of issue #3

- a way to update elements of the array
  - a.set(4,2)   records the number of copies of issue #4

- a way to know the index of the most recent issue in stock
  - a.getExtent()

Demo: Steps 3 & 4

ResArray.java

ResArrayTest.java