




FINAL REVIEWS

CIS*2430 (Fall 2010)



Java Never Ends

- Generics
- Multithreading for concurrent programming
- Network programming
- Java Beans and J2EE
- Java and database connections (JDBC)
- Web programming (applets, servlets, JSP's – Java Server Pages)

Java Fundamentals

- Data types: primitives, classes (references + objects), collections (aggregated objects)
- Within a class: mostly for encapsulation
 - Access privilege: private, package, protected, and public
 - Instance (object) vs. static (class) members
 - Final vs. extendable (variable, method, or class)
 - Exceptions: declare or catch
 - Commonly expected methods: constructors (detailed, no arguments, copy), accessors/mutators, invariant condition, toString, equals, clone, etc.

Java Fundamentals

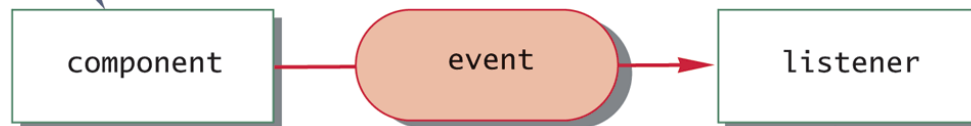
- Between classes: mostly for inheritance and polymorphism
 - Extends (class) vs. implements (interface)
 - Inheritance: share, extend, and override (bottom-up view)
 - Polymorphism: general access and multiple behaviors (top-down view)

Java Fundamentals

- Event-driven and exception handling:
 - Component that fires an event vs. code that throws an exception
 - Events vs. exceptions
 - Event listeners vs. catch blocks

Display 17.1 Event Firing and an Event Listener

The component (for example, a button) fires an event.



*This listener object invokes an event handler method with the **event** as an argument.*

Java Fundamentals

- GUI programming:
 - AWT (old but still needed): `ActionEvent` vs. `WindowEvent`, and `ActionListener` vs. `WindowListener`
 - Swing (new but incomplete): preferred choice
 - Best organization: subclass of `JFrame` with inner classes for different listeners.
- Exception handling:
 - Checked exceptions: either catch or declare
 - Runtime errors: don't need to be caught (e.g., null exceptions, input type mismatch, divide by zero, array out of range, and assertion check error).

Final Exam

- Format
 - Multiple choices
 - Short answer questions
 - Coding and code review questions
- Coverage:
 - Expect more questions for a 2-hour exam
 - Cover everything with an emphasis on the last 1/3 (polymorphism and abstract classes, swings I & II, exceptions, and advanced topics).

Miscellaneous

- Final exam: Dec. 10, 2010: 7:00 – 9:00 pm in Rozanski 103.
- Office hours between now and Dec. 9, 2010:
 - Weekdays between 2 and 4 pm.
 - Location: 215 Reynolds
- Reminder: course evaluation is open until Dec. 2, 2010
 - Any feedback and comments are greatly appreciated.