

CSSE 220 Day 8

Iteration and Debugging

Check out *Iteration* from SVN

Questions?

Today

- ▶ Loop review
- ▶ Debugging Java programs using Eclipse

Java While Loop

- ▶ While loop syntax:
 - **while** (*condition*)
statement
 - In SVN, look at `Investment.java` and `InvestmentRunner.java`

Java For Loop

- ▶ For loop syntax:
 - **for** (*initialization ; condition ; update*)
statement
- ▶ See **Rates** exercise in homework 8 for a single for loop
- ▶ If you finish that, start on **Pyramid Scheme** exercise using nested loops

Sentinel Values: A Loop and a Half

- ▶ *Sentinel value*—a special input value not part of the data, used to indicate end of data set
 - Enter a quiz score, or Q to quit:
- ▶ *A loop and a half*—a loop where the test for termination comes in the **middle** of the loop
- ▶ Examples...

Two Loop-and-a-half Patterns

// Pattern 1

```
boolean done = false;
while (!done) {
    // do some work
    if (condition) {
        done = true;
    } else {
        // do more work
    }
}
```

// Pattern 2

```
while (true) {
    // do some work
    if (condition) {
        break;
    }
    // do more work
}
```

Debugging—Key Concepts

- ▶ Breakpoint
- ▶ Single stepping
- ▶ Inspecting variables

Debugging—Demo

- ▶ Debugging Java programs in Eclipse:
 - Launch using the debugger
 - Setting a breakpoint
 - Single stepping: *step over* and *step into*
 - Inspecting variables
- ▶ Complete **WhackABug** exercise, continue with rest of homework