CSSE 220 Day 9

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) {
    statements
}
```

◦ In SVN, look at `Investment.java` and `InvestmentRunner.java`

Q1,2

Java For Loop

- For loop syntax:

```
for (initialization ; condition ; update) {
        statements
}
```

- Do the Rates exercise in today's homework
  - You'll practice using a single *for* loop in that exercise
- If you finish the Rates exercise, start on the Pyramid Scheme exercise described in today's homework
  - You'll practice *nested loops* in that exercise

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… (on next slide)

Q3,4

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
}
```

The variable *done* here is called a *flag*

Q5

Debugging—Key Concepts

- Breakpoint

- Single stepping

- Inspecting variables

Q6

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

Q7