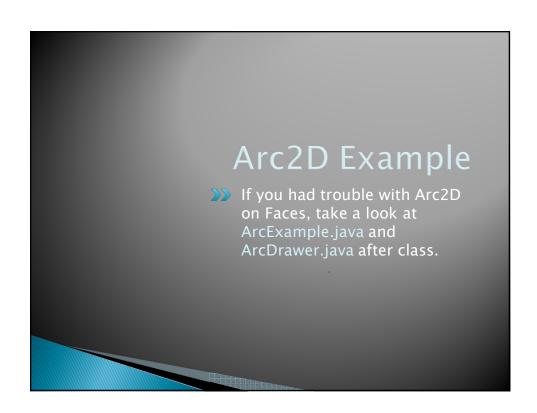


# Today

- Loop review
- Debugging Java programs using Eclipse



### Review Loops: while & for Loops

While loop syntax:

Same as C

```
while (condition) {
  statements
}
```

For loop syntax:

Similar to C

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

}

In both cases, curly braces optional if only one statement in body; but be careful!

### Java Loop Examples

- Look at Investment. j ava, InvestmentTest. j ava and InvestmentRunner. j ava
  - Practice using a single while loop
  - Study and run the code, then answer guiz guestions
- Do the Rates exercise in today's homework
  - You'll practice using a single for loop in that exercise
  - Hint: in printf's format string, use %% to display a single %
- If you finish the Rates exercise, start on the Pyramid Scheme exercise described in homework
  - You'll practice nested loops in that exercise

Q1-Q2

#### 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-Q4

### Two Loop-and-a-half Patterns

```
// Pattern 1
bool ean done = false;
while (!done) {
    // do some work

    if (condition) {
        done = true;
    } else {
        // do more work
    }

    The variable done
    here is called a flag
```

```
// Pattern 2
while (true) {
    // do some work
    if (condition) {
        break;
    }
    // do more work
}
```

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

Q7

