CompSci 6
Programming Design and Analysis

January 31, 2006
Prof. Rodger
Announcements

• Read for next time Chap. 7.1-7.2, 8.1-8.4
  – Loops – while/for
  – Arrays, ArrayList

• Reading Quiz for next time
Chapter 4.1- 4.5 – Data Types

• Eight primitive types!
  – We’ll mostly use int, double, char, boolean

• Convert int to double
  
  int min = 4;
  double dmin = min * 1.0;

• Convert double to int
  
  double dmin = 4.2;
  int min = (int) dmin;    // truncates
Constants

• Constants in a class

```java
private static final RADIUS = 30.0;
```

– Private – only accessible in the class
– Static – belongs to the class
– Final – cannot change its value
Math Functions

- Math.floor(4.2) is
- Math.ceil(4.2) is
- Math.max(5.3, 6.2) is
- Math.min(3, 8) is
Classwork Today - Animation

• Canvas
Canvas Details

• What are the dimensions of the Canvas?
  – java.awt.Dimension

• Creating the Canvas

  final java.awt.Dimension SIZE =
    new java.awt.Dimension(600,600);
  Canvas display = new Canvas(SIZE);  

• Accessing the dimensions

  int height = SIZE.height;
  int width = SIZE.width;
Paint a circle

• Center of the screen
  – Point \((x, y)\)
  – `java.awt.Point`
  
  ```java
  Point center =
  new Point(? , ?);
  ```

• Pen
  – Set the color
    `Java.awt.Color.RED`
  – Fill the oval
Paint a Circle (cont)

• Canvas has a special method
  – paintComponent
  – (must spell it exactly this way)
  – This method is automatically invoked when an event occurs
    • When main sets isVisible to true
    • When a window is resized
Classwork today

• Modify the Canvas class to get the circle to move
• Modify the Canvas class to get the circle to bounce inside the canvas
• Add a new class Bouncer to create a circle that bounces
• Create two bouncing circles