CompSci 6
Programming Design and Analysis

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Prof. Rodger

Announcements

- Next time review for Test
- Assignment 4 due next time

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
  ```java
  final java.awt.Dimension SIZE = 
  new java.awt.Dimension(600,600);
  Canvas display = new Canvas(SIZE);
  ```
- Accessing the dimensions
  ```java
  int height = SIZE.height;
  int width = SIZE.width;
  ```

Paint a circle

- Center of the screen
  - Point (x, y)
  - java.awt.point
  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