

## CSE 113 A

September 21 – 25, 2009

## Announcements

- ⊙ No classes held on Monday, 9/28 until 6:00pm – university holiday.
- ⊙ Lab 1 due 10/2
- ⊙ Exam 1 10/7



2

## Documentation

- ⊙ Inside of Greenfoot, you can view the documentation about the built-in Greenfoot classes. Find this option under the Help menu.
- ⊙ The documentation can help you better understand how to use certain methods from the built-in classes.



3

## Strings

- ⊙ Strings are a built-in type (object) inside of Java.
- ⊙ Strings are a sequence of letters, digits, or other characters.
- ⊙ If you want to specify a String literal, you need to surround it in quotes.
  - ⊙ "this"
  - ⊙ "a"
  - ⊙ "left"

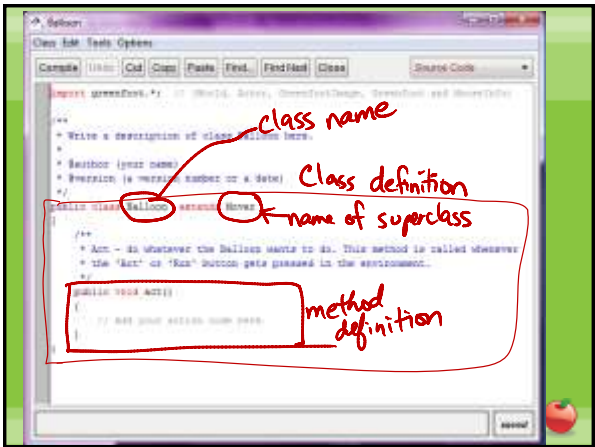
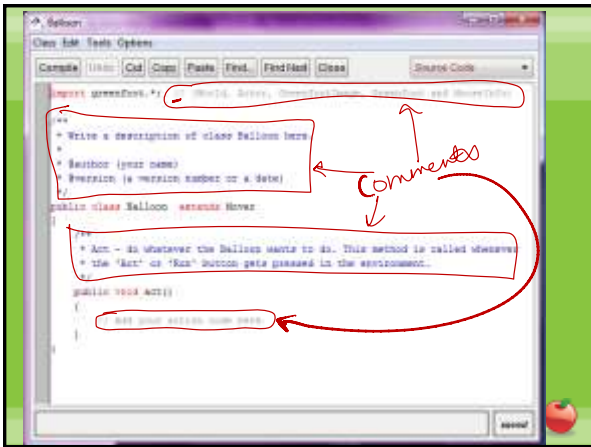
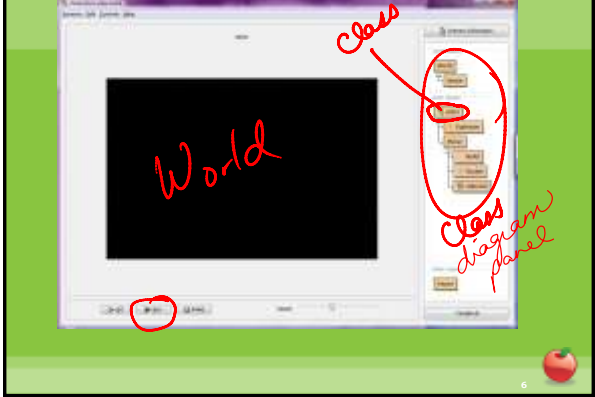


4

# Review

- The next several slides indicate review materials that were covered in class on Monday 9/21 and Wednesday 9/23. They incorporate the main ideas from Chapter 1 – 3 of the text.

Gray bars = code needs to be compiled



```

import greenfoot.*;

/**
 * Write a description of class Balloon here.
 *
 * Author: (your name)
 * Version: (version number or a date)
 */
public class Balloon extends Actor {

    /**
     * Act - do whatever the Balloon wants to do. This method is called whenever
     * the 'Act' or 'Act2' button gets pressed in the environment.
     */
    public void act() {
        // Do your action here.
    }
}

```

```

public class Greenfoot {

    /**
     * Act - do whatever and call move to do. This method is called whenever
     * the 'Act' or 'Act2' button gets pressed in the environment.
     */
    public void act() {
        // Do your action here.
    }

    public void turn(int degrees) {
        // Turn the actor by the specified degrees.
    }
}

```

Write the code for an act method that does the following:

- if hit edge of world, turn ~~to~~ between -30 and 30 degrees
- if hit car, play sound "crash.wav" and stop scenario
- 25% of time - move
- 50% of time - turn 5°

```

if (atWorldEdge())
{
    turn(Greenfoot.getRandomNumber(60)-30);
}
if (canSee(Car.class))
{
    Greenfoot.playSound("crash.wav");
    Greenfoot.stop();
}

```

```

if (Greenfoot.getRandomNumber(100) < 25)
{
    move();
}
if (Greenfoot.getRandomNumber(100) < 50)
{
    turn(5);
}

```

13



## Questions

- Use the previous slides as a study guide. The answer for the last question posed on the slides will be available the week of September 28<sup>th</sup>.

14



## Constructors

- Constructors are special methods that are called each time an instance of a class is created.
- Constructors inside source code:
 

```
public SameNameAsClass()
{
}

```
- Note that there is no return type and the constructor will always have the same name as the name of the class.

15



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16



## Constructors

- ◉ Inside the body of the constructor (inside the `{}`), you can do any of the same things you can do inside of other methods.
- ◉ Therefore, we can call methods from within a constructor.
- ◉ In our example, we call
 

```
super(560,560,1);
```
- ◉ This is a call to a method named **super**. **super** is a keyword that actually indicates a call to the superclass' constructor.

17



## Adding Objects to the World

- ◉ Note that the **addObject** method of the world takes as its first parameter an Actor to be added.
- ◉ We need to create an actual instance to pass into this method.
- ◉ To create an object inside Java source code:
 

```
new ConstructorName();
```
- ◉ **new** is a keyword indicating that we are creating a new instance.
- ◉ **new** is followed by a call to the class' constructor. Values are inserted in the `()` if needed.

18



## Adding Objects to the World

- ◉ **addObject** also takes an x and y coordinate as parameters.
- ◉ We need to remember that in the coordinate system for graphics on computers, origin (0,0) is the upper left hand corner.
- ◉ The values of x increase as we move right on the screen and the values of y increase as we move down on the screen.

19

