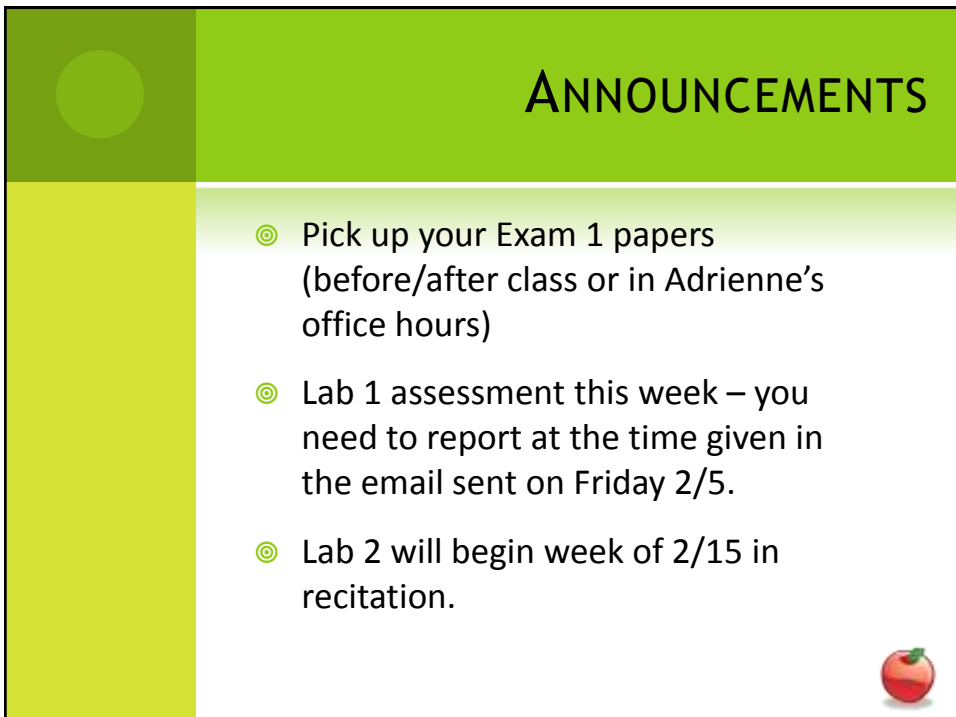



CSE 113 B
February 8-12, 2010



ANNOUNCEMENTS

- ⦿ Pick up your Exam 1 papers (before/after class or in Adrienne's office hours)
- ⦿ Lab 1 assessment this week – you need to report at the time given in the email sent on Friday 2/5.
- ⦿ Lab 2 will begin week of 2/15 in recitation.



3

Methods

① calling methods

↳ asking objects to perform some action

Eg) move, turn, eat

Syntax:

method Name ();
 argument list



4

② defined methods

↳ Give Java source code for what the method is supposed to do.

Syntax:

Method header/signature
public returnType methodName (

parameter list

5

Method body
- enclosed in & including { }

- ↳ calls to other methods
- ↳ if- statements



6

GREENFOOT CLASS DOCUMENTATION

- ⊙ Available from inside Greenfoot
- ⊙ Information about classes built-in that you may want to use/have used in the past
 - ⊙ Actor
 - ⊙ World
 - ⊙ Greenfoot



7

CONSTRUCTORS

- ⦿ Constructors are special methods that are called every time an object is created – they set up the initial state of our objects.
- ⦿ Explicit constructors (ones that you can see in the source code) look like this:

```
public NameOfClass()  
{  
}
```



8

CONSTRUCTORS

- ⦿ A constructor has the same name as the name of the class.
- ⦿ It does not have a return type.
- ⦿ If there is no explicit constructor in the source code for a class, Java provides an implicit one that you do not see in the source code, but is inserted at compile time.



9

CARWORLD CLASS

- Looking at the constructor of CarWorld, we can see a method call that looks like this:

```
super(x, y, z)
```

- Here, we are not calling a method called super, but rather super is a keyword that indicates the superclass. In this case, we are calling the superclass' constructor.



10

ADDING OBJECTS AT STARTUP

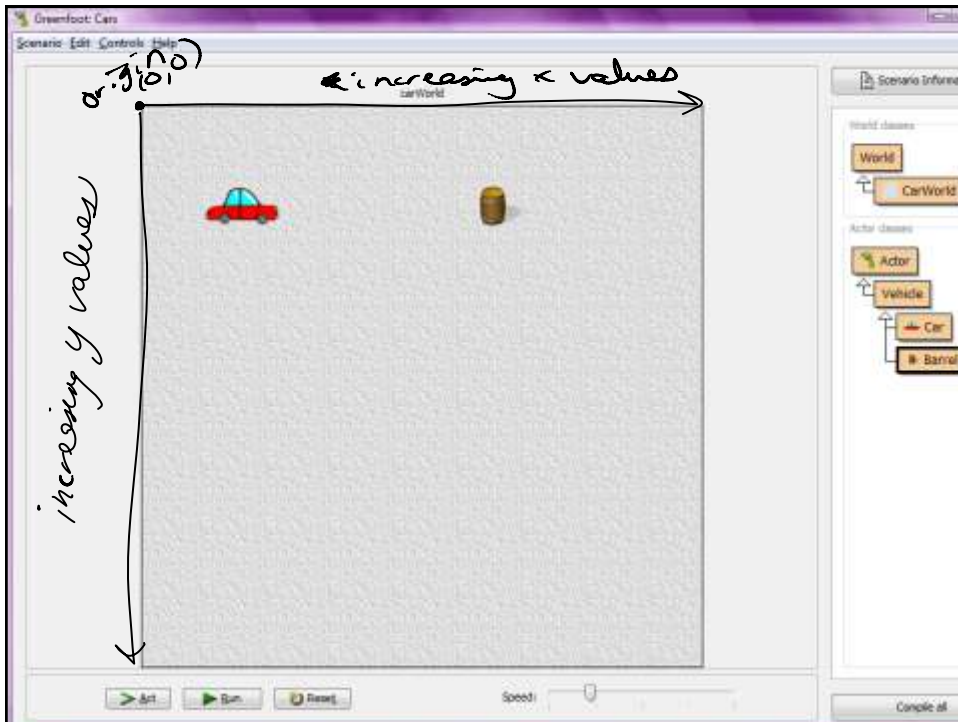
- We can add objects to the world when it is created by calling the addObject method from the world.

- Example

```
addObject(new Car(), 34, 56);
```

- Note that we need to create a new Car object to add by using the expression new Car(). This expression creates an object and calls the constructor of that object.
- The numbers that follow are the x and y coordinates of where we would like the object to be in the world.





12

If we want to store information in our programs, we use a variable.

Variables are places to store information / data.



13

Instance variables store information important to the entire class.

Syntax:

private
 ↳
 who has access

type
 ↳
 what kind of values are stored

identifier;
 ↳
 name of variable



14

public
 ↑
 anyone has access
 (any part of our program)

vs.

private
 ↑
 only accessible from within the class



15

VARIABLES

- ⦿ After we declare the instance variables, it is good practice to give it an initial value.
- ⦿ We would give an instance variable and initial value in the constructor of the class.
- ⦿ Example

```
_barrelsHit = 0;
```

- ⦿ Note that this expression uses the assignment operator (=) and takes the values on the right hand side and assigns them to the variable on the left hand side.



16

MOVING ACTORS

- ⦿ If we create direct sub-classes of Actor, we do not have a “move” or “turn” method.
- ⦿ The Feb 12 version of the scenario shows how to begin to teach Actors how to move on their own.

