CSE 113 A

March 22 - 26, 2010

Announcements

✿ Lab 3 continued this week in recitation

✿ Friday, March 26th – Review for Exam 3

✿ Monday, March 29th – Exam 3

✿ Wednesday, March 31st – Go over Exam 3

✿ Friday, April 2nd – Class cancelled

 ✿ (Adrienne will be out of town April 1st – 4th)

Chapter 7 – Drawing Stars

✿ Drawing stars on the screen

✿ Create method for drawing stars and call it from constructor of Space

✿ Inside method we retrieve the background image and draw ovals at random locations

✿ We also added functionality to create stars in random shades of gray.

3

Speeding Up Rocket

✿ Create code so that the rocket will show a different image when the user selects to speed it up.

4

Casting

☼ Recall from earlier examples the following code:

Actor a = getOneIntersectingObject(X.class);

☼ Remember that X is the class we are interested in looking for collisions with – it can be anything (Flower, Ball, Brick, Barrel).

☼ getOneIntersectingObject returns the object we are interesting with or null if not intersecting an object of the passed-in type. The object that is passed back is of type Actor.

5

Casting

☼ Therefore, the type of the variable a is Actor.

☼ If we try to do this:

X a = getOneIntersectingObject(X.class);

o The code will not compile because getOneIntersectingObject returns an Actor, not an X.

o But we know that the Actor that is really being returned is an X.

6

Casting

✿ However, sometimes we may want to do things with a (the variable) that only X's can do.

✿ However, a is an Actor and can only do things Actors can do.

✿ If we want to treat the object that is returned by getOneIntersectingObject as an X, we can explicitly cast it as an X.

7

Casting

X a = (X) getOneIntersectingObject(X.class);

✿ The (X) is the cast.

8

Proton Wave Animation

- ✿ In ProtonWave class, we see a number of new things:
  - ✿ Array
  - ✿ While loop
- ✿ Each of these things is explained in greater detail in Chapter 5. We are not covering the example from Chapter 5, but these concepts are being covered.

9

Arrays

- ✿ Another type of collection (way to keep track of a group of objects).
- ✿ Arrays are fixed size.
- ✿ To declare a variable that holds an array:

  TypeOfThingInArray[] name;

- ✿ To create an array and assign it to the variable:

  name = new TypeOfThingInArray[NUMBER];

  - ✿ Where number is the number of elements you can store in the array.

10

Arrays

- You can access elements in a array by using their index.

- Indices for an array are from 0 to size -1. So, if there are 20 elements in an array, valid indices are 0-19.

  nameOfArray[index]

- Would allow you to access the element at that index

  nameOfArray[index] = blah;

- Would assign blah to that index.

11

While-loop

- Another form of iteration (looping).

- This loop is not a counting loop like the for-loop, but rather will keep looping until the condition indicated on the loop is false.

  ```
  while (booleanExpression)

  {

      //code that should be repeated

  }
  ```

12