

CSE 113 A

March 21 - 25, 2011

Announcements - Lab

- ⚙ No new lab this week.
- ⚙ Lab 6 will be graded by Web-CAT, but the grading is not functional at this time.
- ⚙ Practice Assignment 6 has been posted and grading is functional.
- ⚙ Lab 7 will be posted and covered in recitation next week.



Announcements – Practical Exam 2

- ⊗ Week of 3/7 & 3/21 in recitation
- ⊗ Schedule of when you are scheduled to take the exam will be posted on the Practical Exam 2 information page (which is linked off of the Schedule page).
- ⊗ Information about what material will be on the exam is also posted there.



Announcements – Exams

- ⊗ Pick up Exam 1 & 2 if you have not already done so.
- ⊗ Exam 3 Monday, April 11th in lecture (covers Chapters 6-8).
- ⊗ Review for Exam 3 on Friday, April 8th.
- ⊗ Review sheet will be posted on or around April 1st.



Review: Motion Using Vector

- ⚙ Vector – (invisible) arrow with a direction and length
- ⚙ Vector stores information about the way a character moves (the direction and the speed of movement).
- ⚙ Vector was a class inside the scenario – had a few methods we interacted with

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Review: Motion Using Vector

- ⚙ SmoothMover was a class in the scenario that used the Vector to move around the screen. Again, no changes really needed to this class.

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Review: Motion Using Vector

- ⊗ Rocket (or any subclass of SmoothMover)
 - ⊗ This is what actually moved.
 - ⊗ If you simply make Rocket a subclass of SmoothMover, it doesn't move. **Note the call to super() in the constructor of Rocket.**



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Review: Motion Using Vector

- ⊗ Moving



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Review: Motion Using Vector

⊗ Edges of World: (SmoothMover)

- ⊗ Now, we actually needed to determine if the actor was at the edge of the world.
- ⊗ We needed to look at the actual x and y position of the actor to figure out if it was on the edge.
- ⊗ In the posted example, the actors “wrapped” around the edges.



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Review: Motion Using Vector

⊗ Turning

- ⊗ The graphics on the screen and underlying computation are not connected by default.
- ⊗ When we called setRotation on the “image” for the actor, it did not change the Vector’s direction. So, we needed to do both – change the visual rotation of the image and change the direction the Vector was storing.



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Review: Motion Using Vector

⊗ Collisions

⊗ Inside Actor:

⊗ `getOneIntersectingObject`

⊗ `getOneObjectAtOffset`

⊗ `getObjectsInRange`

⊗ Each of these methods returns the “actor” that is being collided with or the value null if no collision is occurring.



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getObjects

- ⊗ Method on the World class that got all of the objects of a particular type from the World.
- ⊗ Or, you can use it to get all of the actors from the world no matter what type they are.



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Collections

- ⊗ Collections are groups of things.
 - ⊗ The `java.util` library built into Java has definitions for many different types of collections.
- ⊗ `getObjects` returned something whose type was `java.util.List`
- ⊗ Lists (and other collections) can be specified as to what type of thing they contain with a generic type
- ⊗ `java.util.List<Barrel> listOfBarrels`

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For-each loop

- ⊗ Specialized loop for iterating over a collection of objects. The intent of the programmer when using this loop is that he/she needs to do something with each element of the collection.

- ⊗ Syntax:

```
for(TypeOfElementInCollection nameOfVar: nameOfCollection) {
  //what to do with each element of the collection
}
```

“For each *element* `nameOfVar` in the collection `nameOfCollection`, do the following:”

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