Computer Science 4: Java for Video Games

www.cs.duke.edu/education/courses/fall05/cps004/dr

Instructor

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Introduction

- Administrative material
- Introduction to Java
- Webpage development
- First assignment (due Friday)
Administrative Material

- Course Webpage
- What you will learn?
- Is this course right for you?
- Structure of the course
What you will learn in this course

- **Two primary goals are to teach**
  - Basic programming
  - Basic computer science concepts

- **To explore these topics we’ll study**
  - Video game design
  - Algorithms used in video games
What you won’t learn in this course

- The same amount and type of programming as in CompSci 6 for majors
- Enough about Java or video games to market your own games
- Programming concepts that will only be useful using our video games package
Who should take this course?

- Students with very little or no background in computer programming
- Students who want to learn something about computer programming and might want to take additional courses
- Prospective majors who feel they are not ready for CompSci 6
- Students who want to learn something new, interesting, and fun, that might actually be useful
Who should not take this course

- Computer Science Majors who already know how to program (in any language)
- Computer Programmers
- Students afraid of technology who want to get QS credit with as little pain as possible and who could never imagine taking another computer course (take CompSci 1 instead: it’s a survey course with more general knowledge)
Structure of the Course

- **Homeworks 50%**
  - Weekly
  - Typically done in pairs
  - Build toward project

- **Tests 30%**
  - 2 Each 15% (no final: final period required for project presentations)

- **Project 20%**
  - Used in place of final
  - Done in pairs
Introduction to Java
Downloading Source Code

- Open course website: http://www.cs.duke.edu/education/courses/fall05/cps004/
- Click on Code at the upper right
- Right click on pong.jar
- Select Save Link Target As
- Save to Desktop
Introduction to Java Using Eclipse

- Starting Eclipse
- Making a project
- Importing files into a project
- Editing source code
- Compiling source code
- Executing source code
- Saving project
Starting Eclipse

- **Double Click on** Classroom Applications on the Desktop
- **Double Click on** eclipse.exe
Making a project

- File->New->Project
- Java->Java Project
- Click on Next
- For Project Name type Sample
- Click on Finish
- Switch to Java Perspective? Yes
Importing files into a project

- File->Import
- Zip file
- **Click on** Next
- From zip file **Click on** Browse
- **Click on** Desktop
- **Double click** pong.jar
- Open
- From Into folder **Click on** Browse and select Sample
- Finish
Executing source code

- Click on + by Sample
- Click on + by pong
- Click on Pong.java
- Run->Run as->Java Application
- Play the game
  - Using the mouse
  - Using the keys ‘i’ and ‘m’
Editing source code

- Double Click on PongLoop.java
- Go to line 69 where it says
  
  ```java
  position1.y-=2;
  ```
  (you’ll see 69:23 in the lower right hand corner as you move the cursor in the code)

- Change it to say
  
  ```java
  position1.y-=8;
  ```

- Click on the disk icon to save
  (or File->Save)
Compiling source code

- **Always be sure to save any changes before compiling (done in the previous step)**
- **Project->Rebuild All**
Executing the modified code

- Click on Pong.java
- Run->Run as->Java Application
- What changed?
Saving project

- During class projects are saved on the desktop
- Before leaving the lab be sure to save your project to your acpub account
Saving project

- Click on Sample
- File->Export
- Jar file
- Click on Next
- Select P drive
- Create and/or change into cps4 folder
- Use filename mypong.jar
- Select Export java source files and resources
- Click on Finish
Web Page Development

- Where files should be placed
- How to create and use directories (folders)
- Using Netscape Composer
Webpage Placement

- Your webpage is located in P: \public_html
- Your individual course webpage will be located in P: \public_html \cps4
- Your personal webpage is viewable from http://www.duke.edu/~yourlogin
- Your course webpage is viewable from http://www.duke.edu/~yourlogin/cps4
Creating Directories

- Double Click on My Computer
- Double Click on P drive (could also be indicated by your login)
- Double Click on public_html
- File->New->Folder
- Type in cps4 and Enter
Netscape/Mozilla Composer

- Open up Netscape/Mozilla
- Window->Composer
- Type Hello in the editor
- File->Save as
- Enter Hello as the title for the page
- Select P:\public_html
- Save as Hello.html (assuming you don’t already have one in your own webpage)
Netscape/Mozilla Composer

- In Netscape/IE, go to http://www.duke.edu/~yourlogin/hello.html
- If you don’t already have a webpage prior, rename Hello.html to index.html and go to http://www.duke.edu/~yourlogin/
- index.html is searched for automatically if no filename is given
- Experiment on your own time with Composer to make more webpages and add links
First Assignment

- Visit the course website and complete the first assignment due on Friday