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 Wednesday)
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/dr

- Click on Code at the upper right

- Right click on pong.jar

- Select Save Link Target As

- Save to Desktop

- (confirm that pong.jar is on the 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** Math Apps **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
- Click pong.jar
- Open
- For Into folder Click on Browse and select Sample
- ok
- 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’
- (click on red square near bottom right to end)
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)
- (compile is done automatically when you save)
Executing the modified code

- Click on Pong.java
- Run->Run as->Java Application
  - (or click on icon with white triangle in green circle)
  - (this will repeat the last 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
- Click on Export java source files and resources
- For Select the export destination
  - Browse
  - ICC229 (My Computer)
  - Select P drive
  - Create and/or change into cps4 folder
  - Use filename mypong.jar
- Click on Finish
Web Page Development

- Where files should be placed
- How to create and use directories (folders)
- Using Windows Notepad
  - Can use almost any editor
  - Could use the one in Eclipse
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 (ICC229)
- 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

- **Find and open up** Notepad
- **Type in**
  
  ```html
  <html>
  <head> </head>
  <body>
  <h1> Hello! </h1>
  </body>
  </html>
  
  File->Save as
  - **Select** P:\public_html
  - **Select** cps4
  - **Save as** Hello.html
Netscape/Mozilla Composer

- **In Netscape/IE/Firefox, go to**
  http://www.duke.edu/~yourlogin/cps4/Hello.html

- **Rename Hello.html to index.html and go to**
  http://www.duke.edu/~yourlogin/cps4/

- **index.html is searched for automatically if no file name is given**

- **Experiment on your own time with this web page to make more webpages and add links**

- **(Refer to resources on class web page for help with html)**
First Assignment

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