

Server-Based Game Development

Wednesday evenings, 6:00pm – 9:00 pm, January 9th to March 13th, 2013

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Overview

This course is the second of three in the Game Development for Mobile and the Web certificate program. This course builds on the foundations of gameplay in HTML5 as students develop an increasingly complex game. It also introduces a new set of technologies in networking the game client.

- Advanced game engine architecture: animations, behaviors and state machines, 2D physics, and networking
- Game server architecture including server side arbitration
- Online services: Server side game state storage, Leaderboards and Achievements
- Authentication, Security, Hack prevention, Event logging, Error recovery

Course requirements

Required Textbook

- Pascal Rettig – Professional HTML5 Mobile Game Development – by Wrox (ISBN 978-1-118-30132-6)
- Jacob Seidelin, HTML5 Games: Creating Fun with HTML5, CSS3 and WebGL, 2012 John Wiley and Sons (ISBN 978-1-119-97508-3)

Technology Requirements

We will devote a portion of class time to lab work. It's best if you have a laptop to bring with you during class, but you make up for it by extra participation in code reviews and helping other students.

Homework

The goal of the course is to finish with a fully complete project with advanced gameplay and online features. The homework is broken down into 4 milestones, and every other week students will be presenting the current status of their games.

Attendance

UW Professional & Continuing Education courses require at least 80% attendance, i.e. eight of the ten classes in this course. Each week there will be an attendance sheet and it is your responsibility to sign it.

Course resources on the Internet

This syllabus, lecture materials, homework assignments, solutions, and other resources are available at <http://html5.playeveryware.com/>

Disability Accommodation

The University of Washington is committed to providing access and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. For information or to request disability accommodation contact:

- Disability Services Office: 206.543.6450/V, 206.543.6452/TTY, 206.685.7264 (FAX), or e-mail at dso@u.washington.edu.

Class Schedule

Class	Topic	Readings
#1: Jan 9th	<p>Introductions Review course syllabus and objectives</p> <p><u>Lecture:</u> Development Overview Game Engine Framework Game Systems: Events, Components, Game Objects</p> <p><u>Project work:</u> Proposal for class project (Game pitch & schedule) Engine Proof</p>	Chapters 9 (Rettig)
#2: Jan 16th	<p><u>Presentation:</u> Project Proposal and milestone schedule Class Presentations</p> <p><u>Lecture:</u> Development Overview cont. Game Engine Framework cont. Game Systems: Scene Mgmt, Asset Mgmt, Canvas Mgmt, Sprites</p> <p><u>Project work:</u> Engine Proof continued</p>	Chapters 9, 10, 11 (Rettig)
#3: Jan 23rd	<p><u>Lecture:</u> Camera System Input System Animation System Physics with Box2D</p> <p><u>Project work:</u> Engine Proof continued</p>	Chapters 10, 14, 16 (Rettig)
#4: Jan 30th	<p><u>Presentation:</u> Engine Proof Class Presentation</p> <p><u>Lecture:</u> Advanced Physics features (continued) Audio System Math and AI components</p> <p><u>Project work:</u> Vertical Slice</p>	
#5: Feb 6th	<p><u>Lecture:</u> Online services</p> <ul style="list-style-type: none"> • Setting up Node.js • Session Management, authentication • Serving content to clients <p><u>Project work:</u> Vertical Slice continued</p>	<p>Chapters 19, 20 (Rettig)</p> <p>Chapters 13 (Seidelin)</p>

#6: Feb 13th	<p><u>Presentation:</u> Vertical Slice Class Presentation</p> <p><u>Lecture:</u> Online services</p> <ul style="list-style-type: none"> • MongoDB • Player profiles • Achievements • Leaderboards <p><u>Project work:</u> Alpha</p>	Chapters 20 (Rettig)
#7: Feb 20th	<p><u>Lecture:</u> Real-time multiplayer</p> <ul style="list-style-type: none"> • Websockets • Server/client messaging • Shared code, replication, prediction <p><u>Project work:</u> Alpha continued</p>	Chapters 21 (Rettig) Chapters 13 (Seidelin)
#8: Feb 27th	<p><u>Presentation:</u> Alpha Class Presentations</p> <p><u>Lecture:</u> Online Security</p> <ul style="list-style-type: none"> • Hack Prevention • In-App purchases • Error Handling & recovery <p><u>Project work:</u> Final</p>	
#9: Mar 6th	<p><u>Lecture:</u> Various</p> <ul style="list-style-type: none"> • In Game Editors • Hosting and Publishing your game <p><u>Project work:</u> Final</p>	Chapters 19, 20, 27 (Rettig)
#10: Mar 13th	<p><u>Presentation:</u> Final Post-mortem</p>	