CS74.42A Game Development

Fall 2018 ~ Ethan Wilde

Week 11

SANTA ROSA JUNIOR COLLEGE

Welcome

- Course Outline: This Week
- Textbook Reading This Week
- Advanced Phaser Concepts
- Midterm Exam Review
- Game Design Document
- Extra Credit: Unity3D
- What to Do Next

Course Outline

1 World of Game Development	10 Physics, Particles + Effects
2 Play a Game, Learn to Code 1	11 Midterm Review / Draft GDD
3 Play a Game, Learn to Code 2	12 Prefabs + Classes / Build Sys
4 Intro to JavaScript + Systems	13 Final Project: Design Game
5 Browser-Based Games	14 Adv Development Techniques
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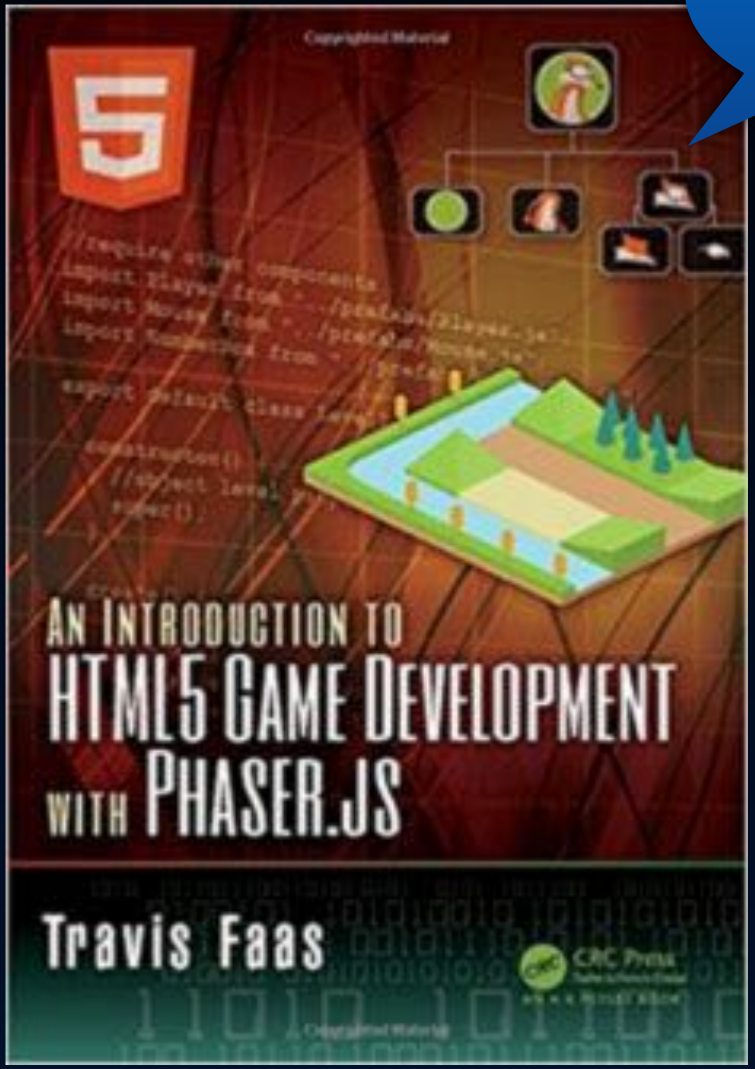
7 Level Maps, Atlases + Tiles	16 Build + Playtest Sprint 2
8 UI + Sound	17 Build + Playtest Sprint 3
9 Simulating the Physical World	18 Final Exam (online)

Get all of the details in the complete syllabus on Canvas.

**Weeks 11-17 include extra credit coverage of Unity3D.*

Textbook: Phaser Game Engine



Ch. 6

pages 122-132

An Introduction to HTML5 Game Development with Phaser.JS

Travis Faas, CRC Press, 2016

ISBN 978-1-138-92184-9 print
ISBN 978-1-315-31921-6 ebook

Software
This Week

Text Editor + File Transfer	**Cloud9** (Browser-based, Mac + Win)
Web Browser	**Google Chrome** (Preferred for Cloud9)
Game Engine	**Phaser CE (v2)** (Browser-based 2D Game Engine)
Free Game Assets	**opengameart.org** (Free Game Assets)

Phaser
2D Game Engine

https://github.com/photonstorm/phaser-ce

Advanced Phaser Concepts

Particle Systems

Used for animations with many items – not individual sprites. Particles are generated by an *emitter.*

Signals

A signal calls a function when something specified happens, like a collision or mouse click.

Prefabs

Subclasses of Phaser objects – we will cover this more in the next module.

Advanced Phaser Concepts

exists

The ***exists*** property of every Phaser sprite and other display object can be set to false to remove the element from any display or logic processing.

```
mysprite.exists = false;
```

removes object from game

Advanced Phaser Concepts

kill() and reset()

The ***kill()*** method removes a sprite from game, but preserves it for re-introduction late using ***reset()***.

```
mysprite.kill();
```

Remove sprite but keep in pool for use later

Creating and removing sprites is time and memory intensive. One approach is to create a fixed number of sprites in a pool to use as needed.

Advanced Phaser Concepts

kill() and reset()

The ***kill()*** method removes a sprite from game, but preserves it for re-introduction late using ***reset()***.

```
mysprite.reset();
```

Revive a previously killed sprite.

Creating and removing sprites is time and memory intensive. One approach is to create a fixed number of sprites in a pool to use as needed.

Advanced Phaser Concepts

lifespan

A sprite may be given a time-based period before being killed automatically by the game engine using **lifespan**.

```
mysprite.lifespan = 2000;
```

Set sprite’s time to live to 2 seconds (200 milliseconds).

*The **lifespan** property is how we tell Phaser we want a sprite to automatically be removed after some time.*

Midterm Exam Review

Please review the following:

JavaScript for Cats online tutorial

Intro to HTML5 Game Development
Ch. 1: Introduction
Ch. 2: State of HTML5 Games
Ch. 3: A Simple Game
Ch. 6: Phaser Principles

Canvas course Modules 1-10

Midterm Exam Review

Fourteen questions in two hours covering:

1. ***JavaScript Programming Basics***
2. ***Game Programming Concepts***
3. ***Phaser.js Library***

Midterm Exam Review

Fourteen questions in two hours covering:

1. ***JavaScript Programming Basics***

Variables, arrays, object values, dot notation, conditionals, and loops.

Midterm Exam Review

Fourteen questions in two hours covering:

1. ***JavaScript Programming Basics***
2. ***Game Programming Concepts***

Sprites, collisions, tweens, camera, physics body, display list and game loop.

Midterm Exam Review

Fourteen questions in two hours covering:

1. ***JavaScript Programming Basics***
2. ***Game Programming Concepts***
3. ***Phaser.js Library***

Phaser game states, spritesheets, input, audio, pooling, lifespan.

Preparing for a Final Project

Three steps to success

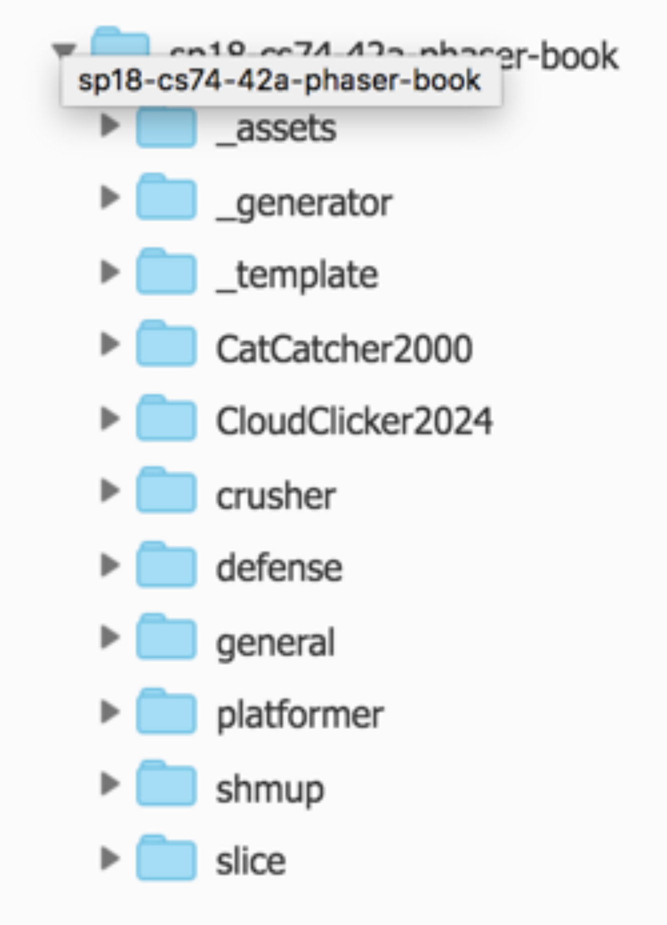
1. ***Draft Game Design Document***
2. ***Final Game Design Document***
3. ***Build + Playtest Sprints***

This week explore the range of Phaser game examples online and from the textbook’s Chapter 7, then…

Develop a rough draft of your plan in a Game Design Document (GDD).

Preparing for a Final Project

Game examples – fixed and working – from the textbook's Chapter 7 available in Cloud9.



sp18-cs74-42a-phaser-book

- _assets
- _generator
- _template
- CatCatcher2000
- CloudClicker2024
- crusher
- defense
- general
- platformer
- shmup
- slice

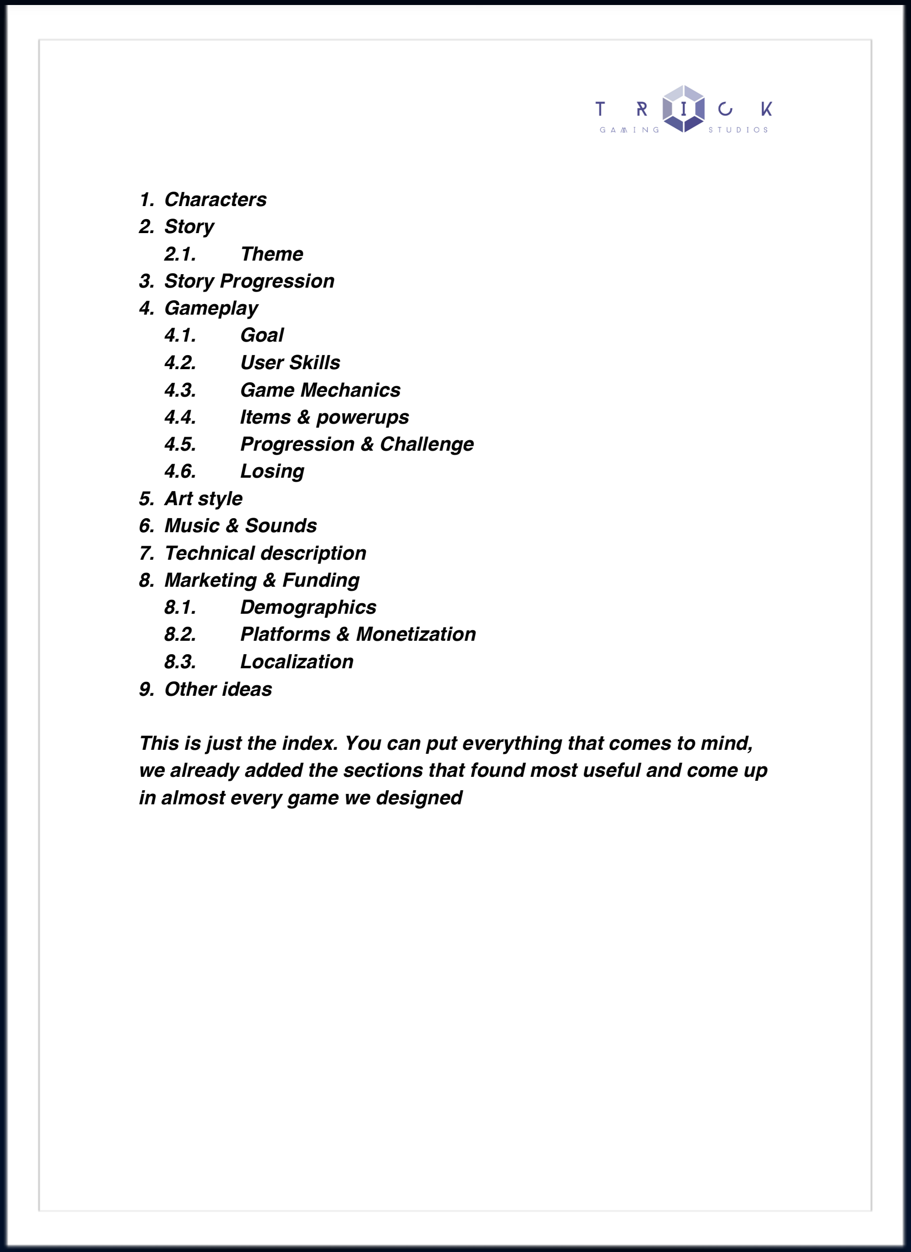
https://ide.c9.io/srjcewilde/sp18-cs74-42a-phaser-book

Preparing for a Final Project

Game Design Document template from Trick Gaming Studio

"How to Write a Game Design Document" by Trick Gaming Studio

http://trickgs.com/blog/how-to-write-a-game-design-document/



This is just the index. You can put everything that comes to mind, we already added the sections that found most useful and come up in almost every game we designed

Extra Credit: Weeks 11-17

Unity3D Game Engine

Completely optional exploration of a game engine that provides a desktop app Integrated Development Environment (IDE) and three-dimensional game world.

This optional path is for students who want it.

Working with Advanced Phaser Concepts

Code Demo

What to Do Next

- **Reading + Watching + Doing**
  - Read *HTML5 Game Development with Phaser,* Ch. 6, pages 122–132
- **Homework**
  - **Assignment 11: Game Design Document**
  - **Midterm Exam**
  - Homework due to Canvas by **11:59pm Thurs 11/8**
  - **Extra Credit begins this week: Unity3D**
- **Canvas Site**
  - All materials available there
  - ***canvas.santarosa.edu/courses/33387***