CS74.42A Game Development

Fall 2018 ~ Ethan Wilde

Week 7

SANTA ROSA JUNIOR COLLEGE

Welcome

- Course Outline: This Week
- Textbook Reading This Week
- Software This Week
- Phaser Concepts
  - Spritesheets, Atlases, Animation, + Tilemaps
- Working with Animation and Tilemaps

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
6 Working with Sprites + Controls	15 Build + Playtest Sprint 1
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
69-72

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)
Spritesheet Editor	**TexturePacker** (Mac + Win application, free version) https://www.codeandweb.com/texturepacker/
Tilemap Level Editor	**Tiled** (Mac + Win application, free version) https://www.mapeditor.org/
Free Game Assets	**opengameart.org** (Free Game Assets)

Phaser
2D Game Engine

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

Phaser Game Concepts

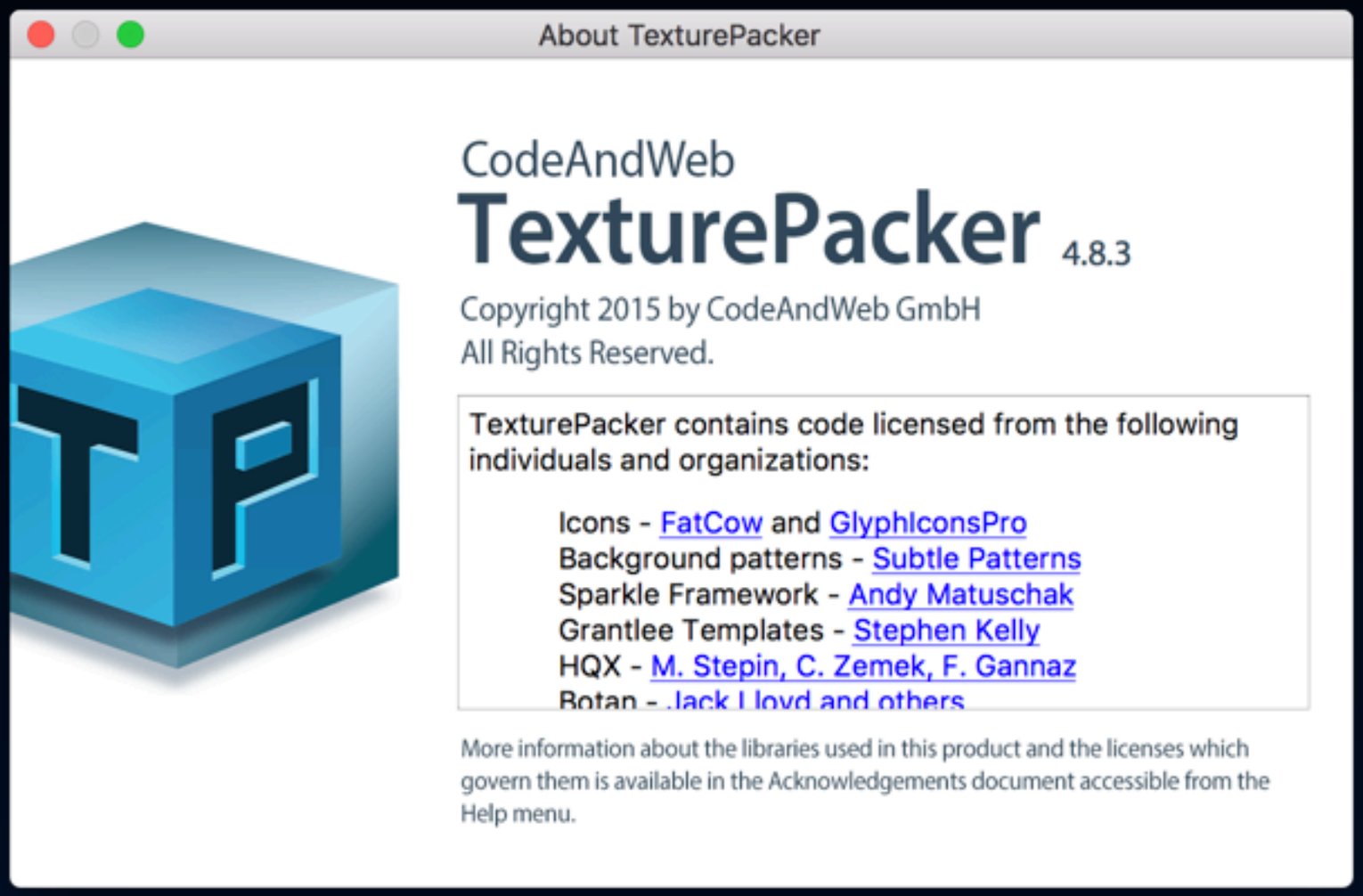
Spritesheets

each frame
is same
width + height

*A **Spritesheet** is a bitmap image asset that contains multiple frames of a sprite's animation sequence or poses – with each frame the same dimensions*

Phaser Game Concepts

Spritesheets



https://www.codeandweb.com/texturepacker/tutorials/how-to-create-a-sprite-sheet

Phaser Game Concepts

Sprite Atlas

each frame
can be different
width + height

frame dimensions
+ frame name
defined in JSON
data file


```
{"frames": [
    {
        "filename": "ball.png",
        "frame": {"x":0,"y":0,"w":16,"h":16},
        "rotated": false,
        "trimmed": false,
        "spriteSourceSize": {"x":0,"y":0,"w":16,"h":16},
        "sourceSize": {"w":16,"h":16}
    },
    {
        "filename": "brick.png",
        "frame": {"x":16,"y":0,"w":32,"h":16},
        "rotated": false,
        "trimmed": false,
        "spriteSourceSize": {"x":0,"y":0,"w":32,"h":16},
        "sourceSize": {"w":32,"h":16}
    },
    {
        "filename": "paddle.png",
        "frame": {"x":0,"y":16,"w":44,"h":8},
        "rotated": false,
        "trimmed": false,
        "spriteSourceSize": {"x":0,"y":0,"w":44,
        "sourceSize": {"w":44,"h":8}
    }],
```


*A **Sprite Atlas** is very similar to a sprite sheet – the difference is that each frame in an atlas may have different dimensions, and a data file defines frames.*

Phaser Game Concepts

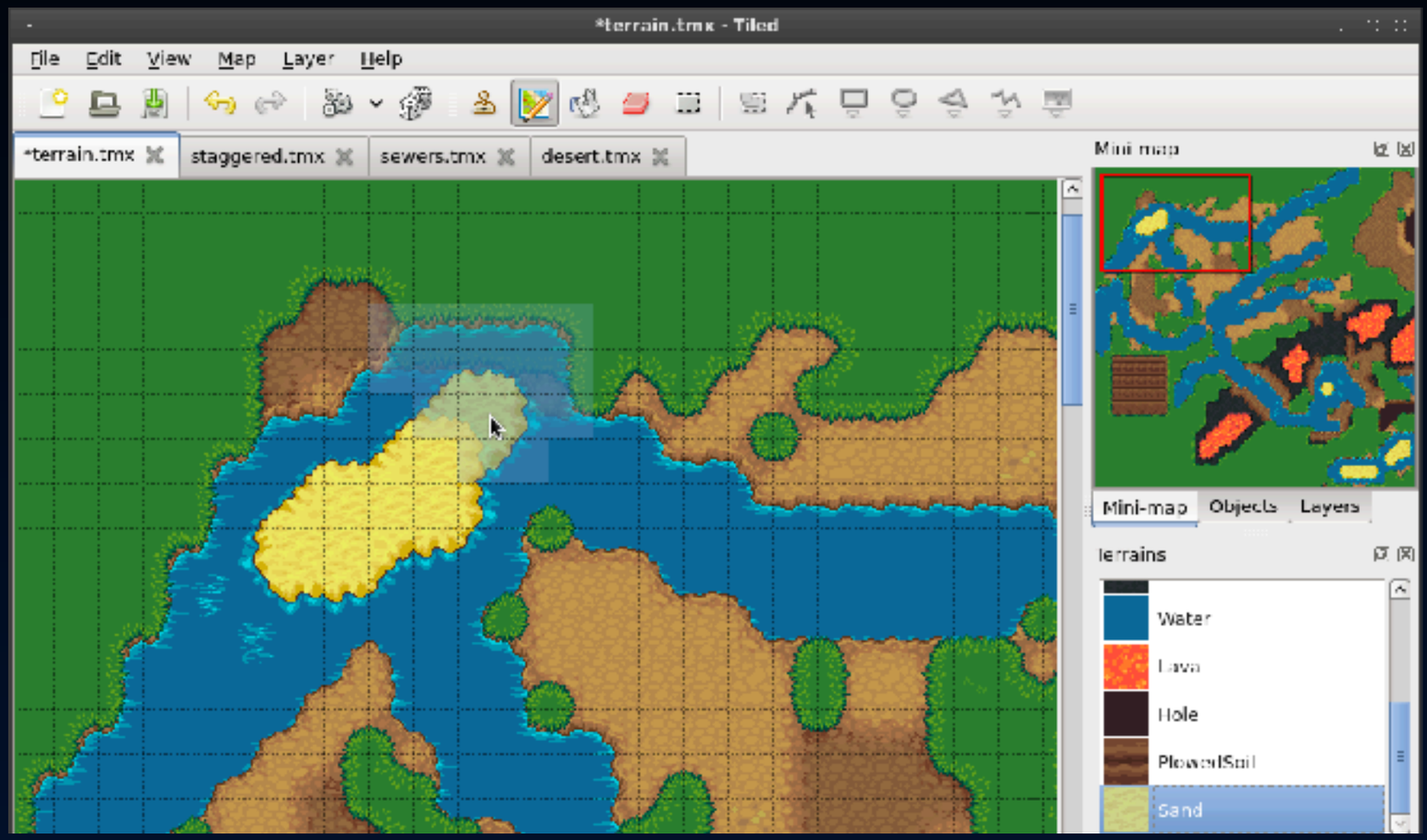
Animation


```
player = game.add.sprite(48, 48, 'player', 1);
player.animations.add('down', [1,2,3,4,5,6,7], 10, true);
player.play('down');
```

*An **Animation** in Phaser is a named sequence of sprite sheet or atlas frames that can be played back.*

Phaser Game Concepts

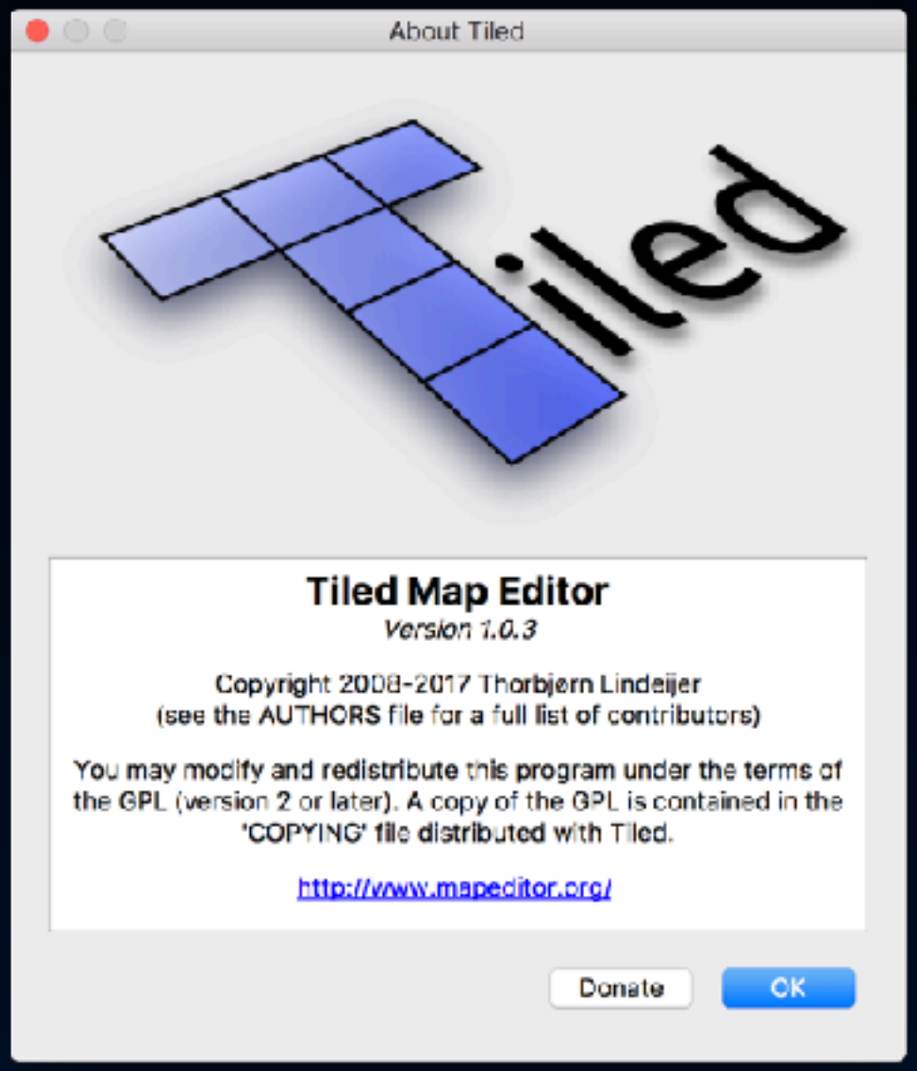
Tile Maps



*An **Tile Map** is a data file that maps instances of sprite sheet or atlas frames onto a grid in order to define an environment for a level-based game.*

Phaser Game Concepts

Tile Maps



https://www.mapeditor.org/

Working with Animation + Tile Maps

Code Demo

What to Do Next

- **Reading + Watching + Doing**
  - Read *HTML5 Game Development with Phaser,* Ch. 6, pages 69-72
- **Homework**
  - **Assignment 7: Using Animation + Tiles**
  - Homework due to Canvas by **11:59pm Thurs 10/11**
- **Canvas Site**
  - All materials available there
  - ***canvas.santarosa.edu/courses/33387***