CMPS 20 – Game Design Experience

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Week 2: JavaScript, HTML5, and CSS

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Upcoming classes and assignments

• Discuss design
• Start quick introduction to Javascript/HTML5/CSS and development tools
• Labs next week
  – In the Mac section (NOT PC)
  – Face the Name game in
• Individual assignment
  – Development environment setup and drawing sprites
  – Alchemy game
  – http://littlealchemy.com
• Team assignment
  – Team formation document
Before we jump in...
Computer Languages

• High- and Low-level
• Compiled / Interpreted
• Scripting / Programming
• For web: client-side / server-side

var total = 0, count = 1;
while (count <= 10) {
    total += count;
    count += 1;
}
print(sum(range(1, 10)));
print(total);
JavaScript (for our class)

• Scripting Language
• Runs within web browser’s context
• Operates on DOM objects
• Provides high-level interface to user interaction
• Implements game logic
Data Types and Operators

- **Basic data types**
  - Null, undefined, NaN

- **Operators**
  - Unary
  - Binary (comparison)
  - Bitwise
  - Precedence
Conditionals, Loops, and Functions

- If()
- for()
- while()
- Functions
Events

- onAbort
- onBlur
- onChange
- onClick
- onError
- onFocus
- onLoad
- onMouseOut
- onMouseOver
- onReset
- onSubmit
- onUnload
Readings

• Readings on creating a design document
• Reading on constraint-driven design
• Reading [R4] on class webpage
  – Eloquent JavaScript Chapters
Main points of the assignment

- Demonstrate ability to create a new program that displays, animates, and manipulates sprites (multiple) on a web browser using the Canvas APIs through JavaScript.
- Alchemy provides a nice framework where you can do all that and still have a complete game to show for your work.
- As game design students you should think creatively that is part of your grade. This is for your own sake, you will pass the class if you just meet the minimum requirements for assignments.
- Brine and JSFiddle are useful tools that are meant to ease your programming not hinder it. However, as with any new tool, you have to give them some time to become adept at them.
- So long as you make sure that you can show me moving and interacting sprites, details of other stuff (exact number of sprites, keyboard v/s mouse interaction, etc. are not important and will not affect your grade).
- Assignment guidelines are to mainly provide you with a bare minimum of what is needed. You can take it as far as you want (that is the creativity part of the grade).
- Mainly designed to get you to play around with your tools before jumping into a big game project.
By now you should already know

- Canvas
- Context
- Basic drawing and updating Sprites
- Basic Text display
- Running functions repeatedly (setInterval)
- Mouse and Keyboard interaction
- Debugging
Moving Sprites
Transformations

- 2D Coordinate systems
- Local and global
- Transformations
  - Translate
  - Rotate
  - Scale
  - Shear
  - ...