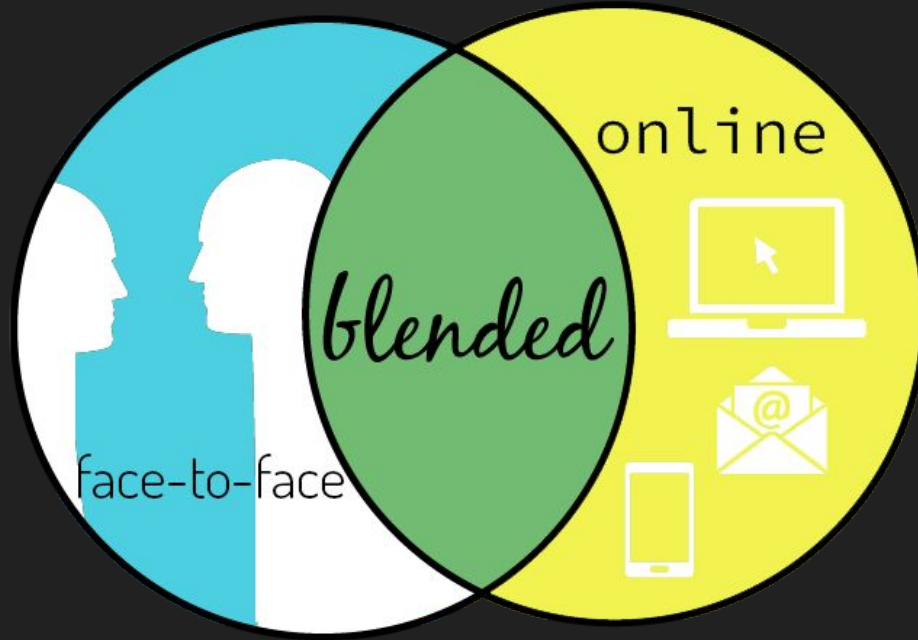


1.00 for Life

Chao Cheng

Mentor: Dr. John R. Williams

Introduction



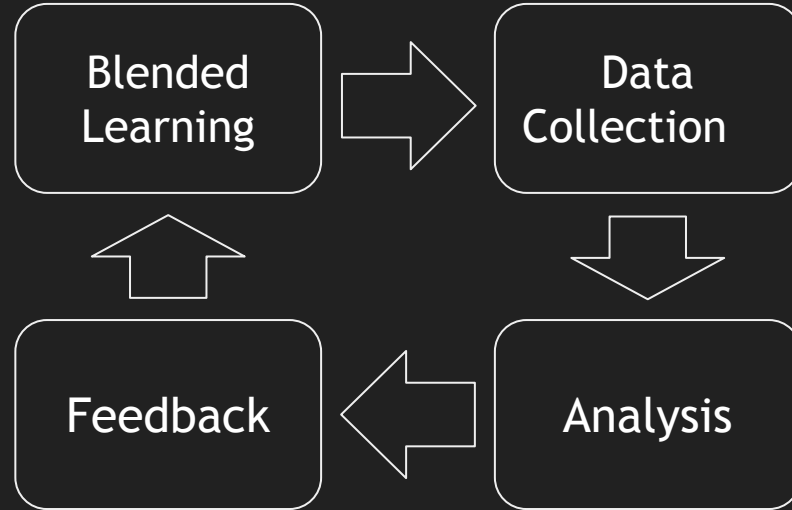
UDACITY

Benefits of Blended Learning

- Flexibility
- Cost
- Individualized Teaching



How Can We Maximize the Effectiveness of a Blended Learning Model of Teaching?



Data Analysis

- Track student usage of online materials
- Create predictive model to determine student success based on assignments



Analysis of Course Materials

- Supplementary Videos
 - Number of views of segments
- Webpages
 - Number of daily views (Google Analytics)
- Online Forums: Piazza, Google Classroom
 - Number of daily questions
 - Number of daily comments

Goal: to evaluate the effectiveness of materials and their correlation with grades

Lecture 3 - Functions

Preparation Material - Functions

- Function Basics
- Functions are Objects
- Scope: Basics
- Scope: Forgetting Var
- Scope: Nested Functions
- Functions Provide Scope

Preparation Material - Timers

- 📄 SetTimeout vs setInterval
- Basic Timers
- Repeating Timer
- Animation Basics Using Timers

Mini Lecture

- Web Document Basics - Class Mini Lecture
- 📄 Web Document Basics - Slides
- 📄 Binary - Slides

Active Learning

- 📄 Binary Counting Exercise

Predictive Model

- How to measure progress?

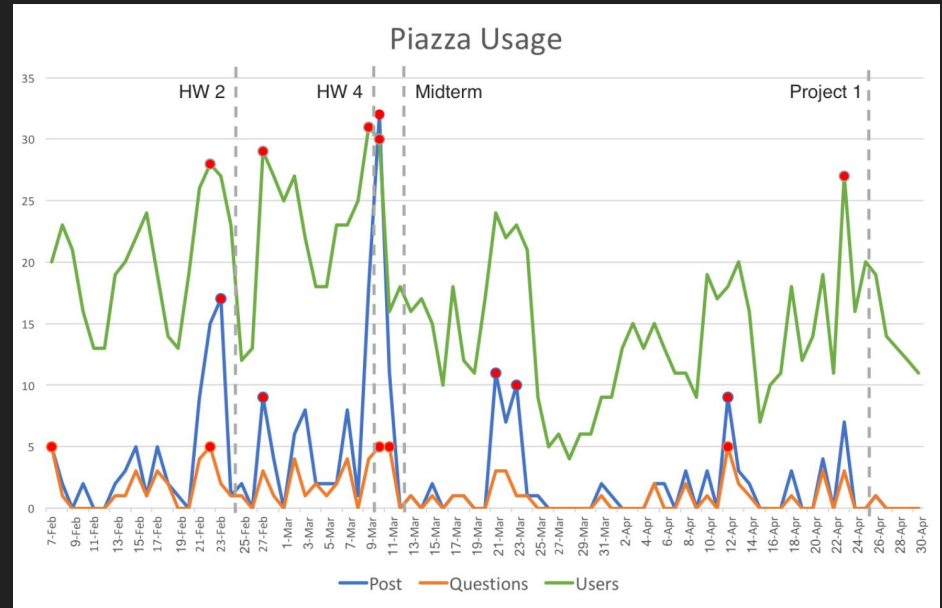
```
✓ Correct b value  
✓ Correct a value  
✓ Returns a function  
✓ Correct y value, given an x
```

```
4 passing (31ms)
```

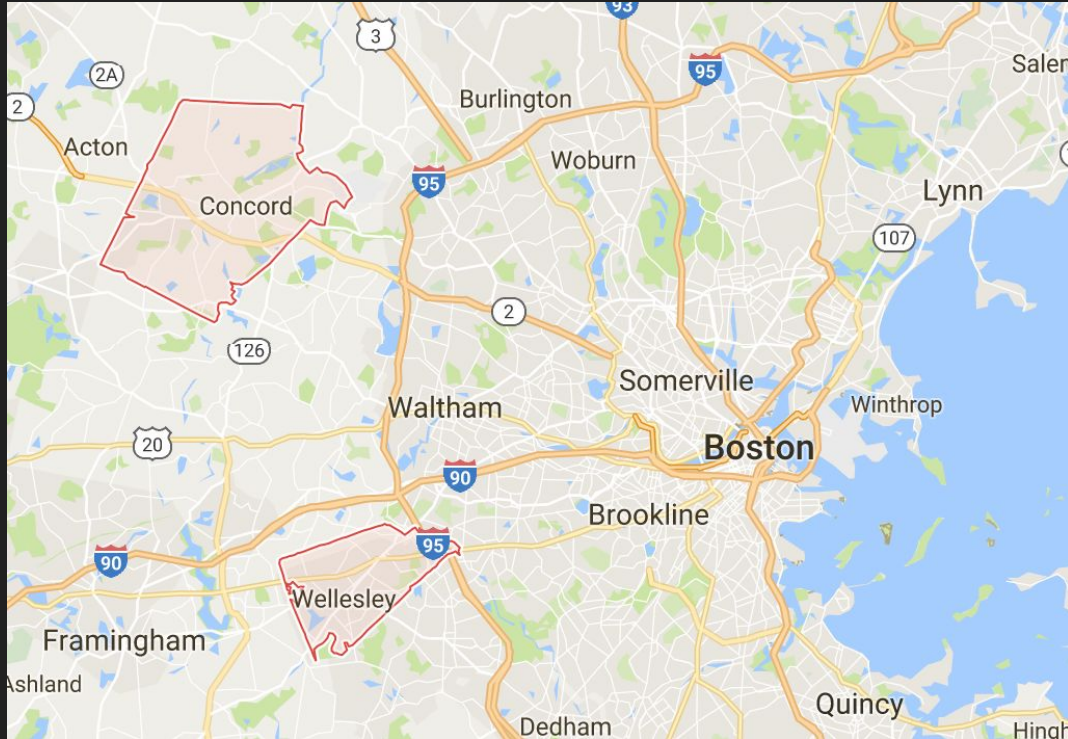
- Utility: tool for instructors to determine the likely performance of students on midterm or final

Summary of Goals

- Provide feedback for instructor
- Use predictive model as tool to measure student success
- Create automatic grading system

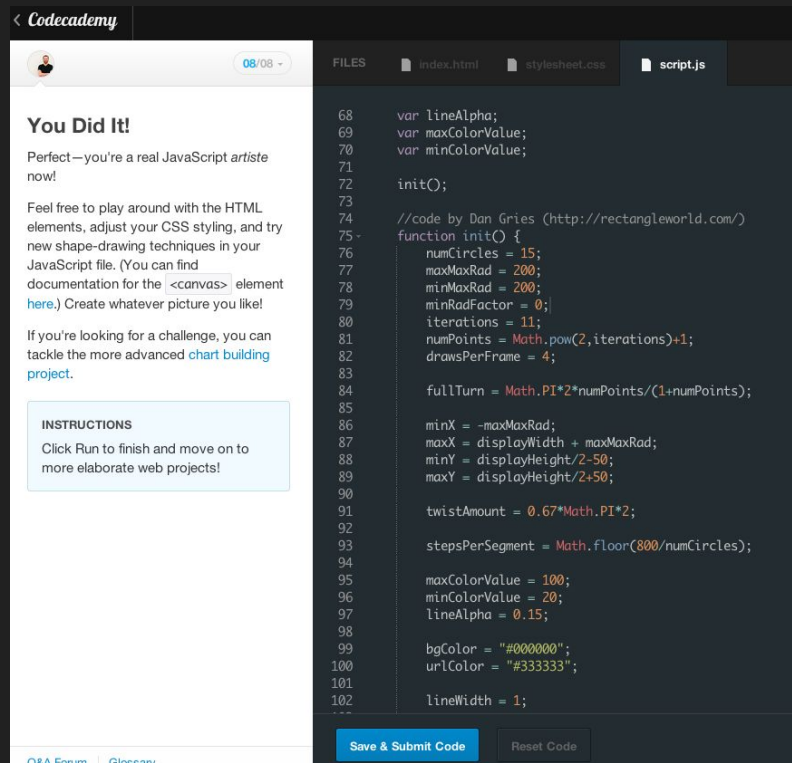


Classroom



Projects for the Future

- Expand automatic grading system to other subjects: Math, Biology...
- Design better ways to integrate analytic system into course materials
 - Online IDE



The screenshot shows the Codecademy IDE interface. On the left, a 'You Did It!' message congratulates the user for completing a JavaScript project. The main area displays a JavaScript file named 'script.js' with the following code:

```
68 var lineAlpha;
69 var maxColorValue;
70 var minColorValue;
71
72 init();
73
74 //code by Dan Gries (http://rectangleworld.com/)
75 function init() {
76   numCircles = 15;
77   maxMaxRad = 200;
78   minMaxRad = 200;
79   minRadFactor = 0;
80   iterations = 11;
81   numPoints = Math.pow(2, iterations)+1;
82   drawsPerFrame = 4;
83
84   fullTurn = Math.PI*2*numPoints/(1+numPoints);
85
86   minX = -maxMaxRad;
87   maxX = displayWidth + maxMaxRad;
88   minY = displayHeight/2-50;
89   maxY = displayHeight/2+50;
90
91   twistAmount = 0.67*Math.PI*2;
92
93   stepsPerSegment = Math.floor(800/numCircles);
94
95   maxColorValue = 100;
96   minColorValue = 20;
97   lineAlpha = 0.15;
98
99   bgColor = "#000000";
100  urlColor = "#333333";
101
102  lineWidth = 1;
103  --
```

At the bottom of the IDE, there are buttons for 'Save & Submit Code' and 'Reset Code'.

Acknowledgements

Thank you to:

Dr. Williams

Dr. Sanchez

Mr. Beckwith at Concord-Carlisle High School