< CARRIE LINDEMAN > PORTFOLIO

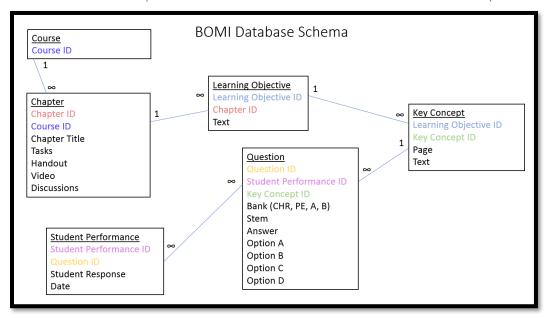


As an instructional designer at BOMI International I have been able to enhance my eLearning industry knowledge and development skills. This position balanced working independently and being a part of a learning development team. I have been given leadership roles and responsibilities on projects for clients, learners, and internal BOMI. The variety of work that I did at BOMI International show my diverse range of skills.

Skills Utilized: applying instructional design principles, writing, Microsoft Office, Articulate Storyline, database design, media editing software, assessment writing

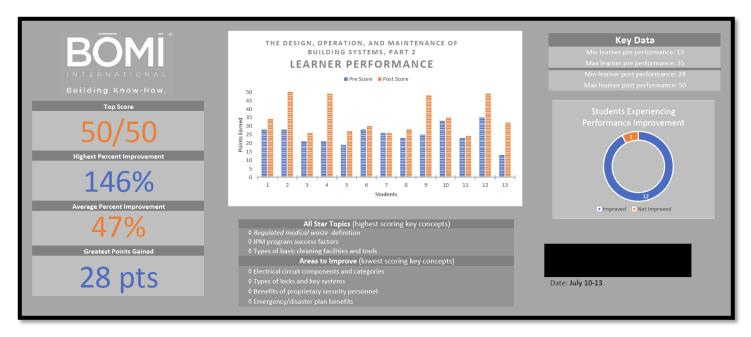
Examples:

A large portion of my work at BOMI has been validating and improving the connections between our content and our course objectives. I developed a system of mapping content, learning objectives, key concepts, assessment and learner performance so that validation of learner retention is possible.



This database schema demonstrates the detailed object-oriented approach I took toward validating and updating BOMI materials.

My role also called for the data supported justification of courses and course materials. I was tasked with demonstrating learner performance and growth through assessment data. Below is a comprehensive dashboard I created for a BOMI client about their performance in a course.



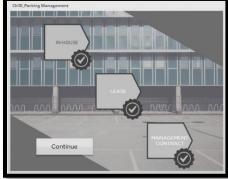
Beyond the data driven work I was able to apply my elearning development and instructional design skill to the creation of online and blended course assets. I independently used BOMI International case studies and course content to create situational interactive learning modules. These modules included key concept check questions and interactive displays. These are achieved with Articulate Storyline and Articulate Rise.













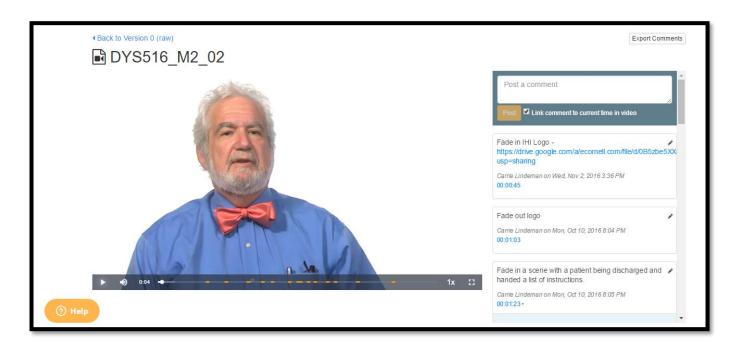


During my time as an intern and contracted employee at eCornell I have had a range of responsibilities. Most importantly I have gained experience in a professional work environment. I have learned how to work on multiple projects at the same time and to balance responsibilities from different supervisors. The quality of my materials and my growth while at eCornell illustrates my work ethic.

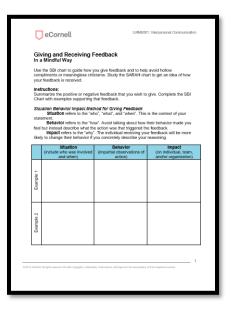
Skills Utilized: applying instructional design principles, writing, Microsoft Office

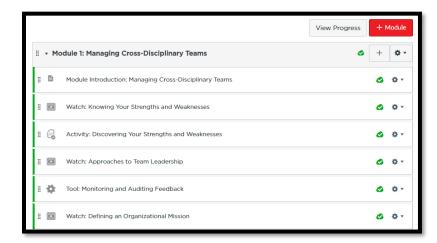
Examples:

One of my key responsibilities was to annotate videos of professors' lectures. I watch the videos and look over notes from the video shoot. Based on this information I describe the animations that should occur at given timecodes. This is a combination of finding and creating graphics for the videos and coming up with and describing actions or scenarios that should be animated. Each video is approximately 3 to 5 minutes and is about 60-80% animated.



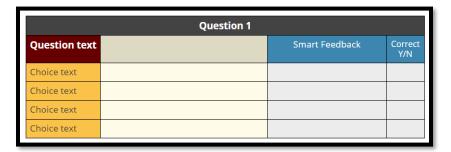
Another opportunity has been to make learning activities for the courses. While assisting instructional designers in course development I have made activities for the learners to exercise what they have learned through reading and watching material. These activites range from self-reflection to professional development but they are all geared towards achieving a learning goal. This has also included guided how-tos on different learning tools.





I additionally work on creating course shells in Canvas, writing glossaries, and working on course planning documents. These tasks give me a firm understanding of the core points of the courses I am working on.

Finally, I have recently begun my work on assessment at eCornell. I review a subsection of a full course and create multiple choice assessment questions to reveal student understanding and long-form questions to show reflection and application of material.



ELEARNING MODULES

As a part of my eLearning course at Ithaca College I created a few educational modules. I individually created two learning modules about computer science and participated in the development of an online capstone course at Ithaca College. These modules cover a single lesson and expect pre-existing knowledge.

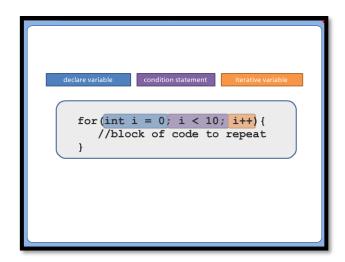
Please visit at www.CarrieLindeman.github.io/

Skills Utilized: Articulate Storyline, Adobe Editing Suites, writing, computer science knowledge

Examples:

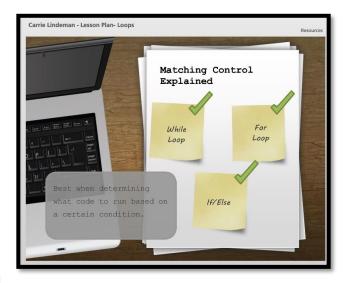
I created graphics that the learner could reference as a tool to learn Java syntax. These tools are available throughout the lesson to help the learner understand the purpose of syntax instead of just memorizing characters.

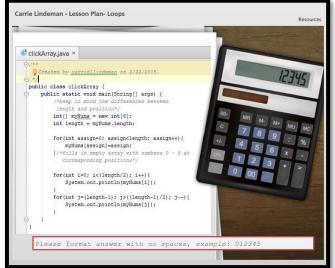




Throughout the lesson the learner is prompted to complete self evaluation through interactive activies. This is an example of a matching activity that assesses the learner's understanding of overarching concepts.

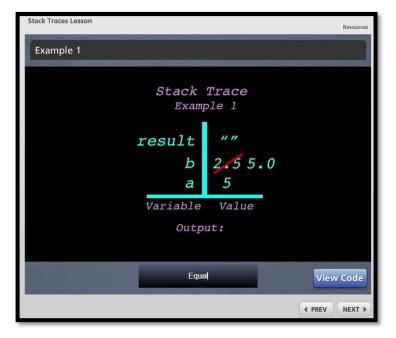
After completing the matching activity the learner is given an in-depth explanation for the correct answers.





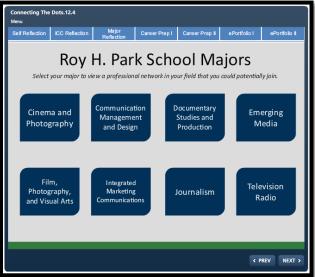
This activity asks the learner to trace through the code provided and figure out what the program will print. Once they have completed the trace they can input the answer and check if they are correct.

In a different lesson I actually included videos I created. I animated a video that goes through the steps of creating a trace for different levels of complication. The module allows the user to toggle between the video and the code to follow along with the process.



And finally, I worked on the Connecting the Dots Capstone course for the Roy H. Park Communication School at Ithaca College. This is a required online course for all senior students of the Communication school. It guides them through a reflections of their work while at IC, their career preparation, and the development of their ePortfolio.





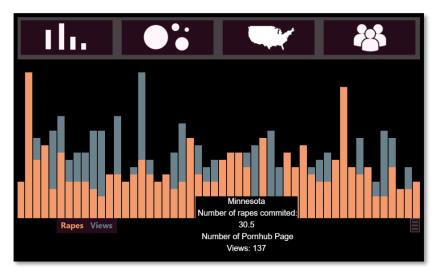
INTERACTIVE MEDIA

Throughout my time at Ithaca College I have created a wide range of interactive media for various class assignments. These projects were some of my favorites that I created.

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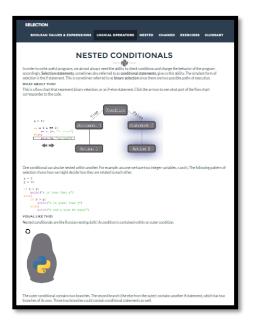
Skills Utilized: HTML, CSS, JavaScript, Phaser, Adobe Editing Suites

Examples:



I created an interactive data visualization that compared the rates of pornography viewed per state and the number of sexual assaults per state.

I was given the assignment to create a small piece of what I considered to be an "emerging media". I created a pseudo intelligent tutoring system. After each chapter the student is asked how confident they feel about the topics they just read. If they responded that they were not confident they then are prompted to review the chapter but now the chapter has interactive review material. The subject matter is introductory Python programming, specifically studying selection and if statements. I adapted material from an open source textbook and designed the interactive elements and feedback. The interaction was created using JavaScript and Phaser.

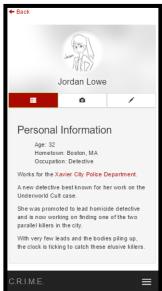






Another assignment was to create an interactive piece of art. On the left is a static fairytale scene that I created in Adobe Photoshop. Clicking on the sun reveals an interactive, mysterious fairytale world. The stars twinkle, particles and a glow emit from the sword, the user can draw pictures in the sky, and even fly the dragon with their arrow keys.









My junior year capstone group project was creating a proof of concept media platform. We called the media platform X-Screen. Our platform was aimed at getting the attention of the viewer both though traditional television and a companion app. The show is expanded upon and made more interactive through this app. My team members wrote a pilot episode of a mystery show and I created a prototype app that followed along with the show. The users could read background information about the characters, catalouge suspicions, and view show locations on a map.



As a contracted employee of Shmoop I work on a per project basis. This means I write questions for different practice exams or lessons. So far my experience has included creating material for AP Computer Science exams. These exams are created to evaluate a student's understanding of computer science principles, data structures, programming in Java, and more. After writing the questions and example code I rank the question's difficulty and tag the topics focused on in the question.

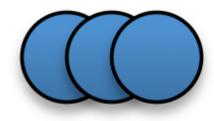
Skills Utilized: Java programming, writing, applying instructional design principles

Example:

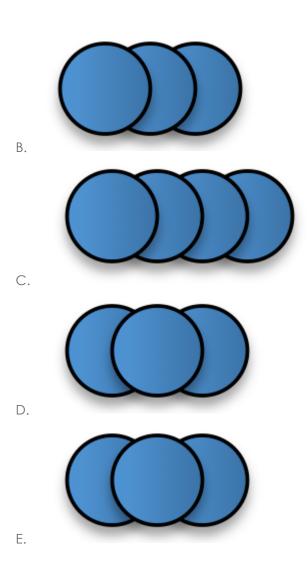
Assume there is a function drawCircle (double x, double y, double r) that draws a circle at a given coordinate and with a given radius. Now consider the following code segment.

```
public static void recurseCircle(double x, double y, double r, int numCirc){
    if(numCirc == 0) {
        return;
    }
    drawCircle(x, y, r);
    recurseCircle(x-r, y, r, numCirc - 1);
}
```

Which of the following drawings represents the output if numCirc has the argument of 3?



Α.



The correct answer is (B).

Answer (B) is the only image that could have been made from this code. The first circle drawn (bottom of the pile) is to the right and all of the circles drawn on top of that are to the left. Based on the order that the drawCircle function is called and recursive call is made it the first circle drawn should be farthest to the right.

Once you acknowledge that the recursive function will draw circles to the left because of the $\mathbf{x} - \mathbf{r}$ in the recursive call it is easy to eliminate (D) (E). This means the first circle drawn is the right most circle. The next tricky part about this program is the order of the drawing and of the recursive call. Because the recursive call comes after the draw, the first thing drawn should appear in the "back" of the image (A). The value of numCirc starts at three so only three circles should be drawn (C).



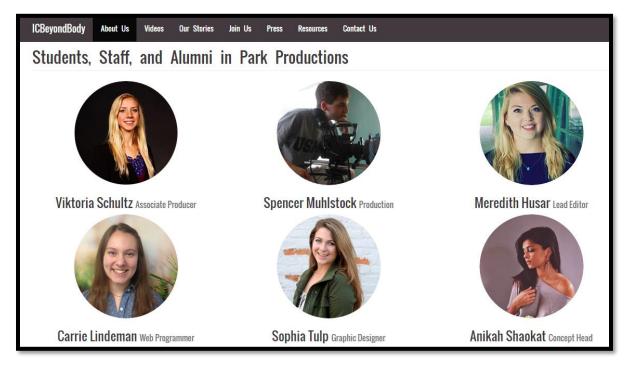
I became a member of the Park Productions Staff at Ithaca College in January 2016. This is a production lab funded within Ithaca College that creates independent projects. I was hired to create a website for a project/campaign that the production staff had created. The campaign focused on finding meaning and self-worth beyond physical appearance. The project included numerous videos from students and professors, social media, and online resources for individuals looking for more information about self-esteem. I collaborated with the teams and vision heads to make the website reflect their ideas.

Please visit at www.ICBeyondBody.com

Skills Utilized: HTML, CSS, JavaScript, Adobe Editing Suite

Examples:

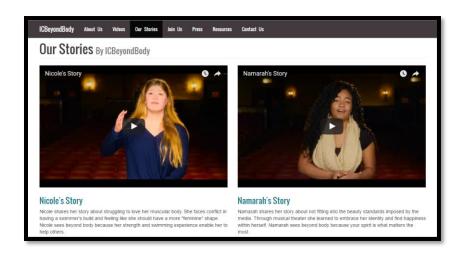












RAY TRACING GRAPHICS RENDERER INDEPENDENT STUDY

I participated in an independent study with Ithaca College professor Paul Dickson where we built a ray tracing graphics renderer. I worked for a semester with Paul to analyze the mathematics behind the model and wrote the code to output the graphics. The ray tracer that we built used object oriented programming. An object is an instance of a class that has attributes, accessors, and mutators.

In my ray tracer I had lines, spheres, planes, light points, and more. The light points were added so that the objects placed in our virtual world could actually be seen. This is where some of the physics of computer graphics rendering were applied. I adjusted the numbers in my program to make the lighting look realistic but there is a lot of mathematics and research that goes into capturing the physics used in graphics renderers.

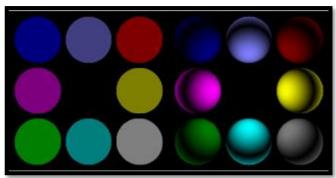
A ray tracer works by having a given perspective position or "camera" that sends a ray through every pixel of an image. If a frame of the movie is 1080x1920 pixels then the camera sends out 2,073,600 rays, which explains why ray tracing graphics takes so long and takes so much RAM. A ray has a starting point and travels infinitely in a direction. Sending out a ray means that every position between the camera and the last object in the virtual world is checked to see if it intersects with an object. If the ray intersects with an object then it sets that value of the pixel to be the color value of the objects. Lighting and physics may alter the color of the pixel as well.

Skills Utilized: C++ programming, mathematics

Examples:



Image created from my ray tracing graphics renderer featuring planes.



Images of spheres renderer before and after