

Name of Lesson: Collaborate, Create, & Share!

Grade Level: 1000 level College Course

Subject: Introduction to Basic Web Programming

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Overview and Purpose:

The purpose of this lesson is to introduce the concept of pair programming to students, incorporate best practices, and use its techniques to develop a basic web page (using HTML5 and CSS3) within a web-based playground environment that will be shared on a social network platform with their peers.

Students will work actively in pairs to gain experience using pair programming techniques and create a simple web page based on the assignment's criteria by using a web-based front end web development tool (CodePen). After completion, students will share their "Pen" with the class in a private Google+ community created specifically for this course. Students will gain experience in hands-on Web programming, working in a web-based cloud environment, group collaboration, and sharing within a social network platform.

The overall goal is to acclimate the students to a form of programming often used within the industry, to allow the students to gain experience working within a web-based, front-end development playground cloud environment to produce source code, and to experience sharing on a social network platform for collaboration and learning purposes. All of these skills are required by industry.

Duration: 2.5 Hours

Objectives:

Specify skills/information that will be learned

- Students will learn what pair programming is and its techniques.
- Students will learn three of the best practices to observe when pair programming.
- Students will work with and learn basic Web programming coding including HTML5 and CSS3 tags and techniques.
- Students will learn what CodePen is and how it can be used as a web-based front end web development tool.
- Students will create a basic web page using CodePen and learn how to export and share a "Pen".
- Students will experience sharing for learning and collaboration purposes on a social network site (Google+).
- Students will experience working in a team environment in order to achieve a common outcome.
- Students will learn the importance of communication skills in a team environment.

Materials Needed:

- Internet access (26 students)
- Classroom computer access (personal laptops may be used) (13 total, 1 per group)
- Current version of either Google Chrome or FireFox web browsers.
- Google+ account - Free (1 per student)
- CodePen account - Free (1 per student)

Other Resources:

(websites, videos, books, etc.)

- Define Pair Programming: https://en.wikipedia.org/wiki/Pair_programming
- Discuss Best Practices for Pair Programming: <https://www.iste.org/explore/articledetail?articleid=221>
- Watch "Introduction to using CodePen" (YouTube): https://www.youtube.com/watch?v=VJw_9cyr0vI
- Explore the CodePen website: <http://codepen.io/about/>
- Explore the CodePen blog and documentation: <http://blog.codepen.io/documentation>
- Watch "What is Google+?" (YouTube): https://www.youtube.com/watch?v=hC_M6PzXS9g
- Explore the Google+ website: <https://plus.google.com>

Information:

Give and/or demonstration necessary information

- Demonstration of CodePen, how to use it, navigate to the different components, and how to share and export a "Pen".
- Demonstration of Google+, how to share a "Pen" and send it to our private **ITWP1000 MCC** Google+ community created for this course.
- A brief look at the **ITWP1000 MCC** Google+ community.

Verification:

Steps to check for student understanding

1. Circulate throughout the classroom and observe students working in pairs and verify that each team member is taking turns programming and navigating.
2. Observe that communication and collaboration is taking place.
3. Circulate throughout the classroom and periodically review each team's source code.
4. Observe students working with the CodePen tool and ask questions of them. Are they understanding how to use it? Does it make sense?
5. Was a "Pen" successfully created and exported?
6. Was a "Pen" shared within the **ITWP1000 MCC** Google+ community for this course?
7. Open discussion regarding each individual's view on pair programming and using CodePen and Google+.

Activity:

Describe activity that will reinforce the lesson

Prior to starting the activity, time will be allocated for in-class demonstrations and explanations of pair programming, CodePen, and Google+. Students will be introduced to the terminology, tools, and resources needed to successfully complete this lesson.

5-10 minutes

1. Students are paired together in teams of two and adjust their seating arrangement in the classroom accordingly. The team is instructed to decide who is going to be the programmer and who is going to be navigator and at what time during the project the roles will be reversed.
2. Students are instructed that one "Pen" will be submitted for each team and each team will receive one grade.
3. Students set up their free CodePen and Google+ accounts.
 - a. Each student supplies me with their Google email address and I will send an email inviting them to join the **ITWP1000 MCC** community for this course.
 - b. This must be completed in order to gain access and share the completed web page "Pen".

60-120 minutes

This portion of the activity is expected to take the longest since CodePen is being introduced for the first time in the course. Although this is a user-friendly and easy-to-use tool, students will need to become acclimated to it and its environment.

1. The specifics of the web page lesson and its requirements are presented to the group of teams along with a working example of a completed web page "Pen" within CodePen.
2. The lesson includes creating a web page "Pen" with the following criteria and required web components:
 - Teams can choose a topic of their choice.
 - The web page "Pen" is one page in length.
 - Appropriate HTML commenting indicating each team member's name is present.
 - The web page "Pen" contains a minimum of 4 paragraphs of descriptive text pertaining to the page topic.
 - The web page "Pen" contains a minimum of 2 heading elements.
 - The web page "Pen" contains a descriptive title element.
 - The web page "Pen" contains at least one image, one audio file, and one video file.
 - The web page "Pen" contains at least two hyperlinks.

- The font family, font color, and basic layout of the page is styled using CSS which resides within the CSS "Pen" component.
 - Basic structural HTML5 and CSS elements are present.
 - Any image, text, and media elements should include an information source documented within the footer area of the web page "Pen".
3. Students work on developing the team's web page "Pen" and switch roles between the programmer and navigator throughout the lesson observing the best practices for pair programming as they work through the lesson.
 4. Once the "Pen" is completed, it's successfully saved to the cloud and the necessary "Pen" description and information for the "Pen" is completed via the required form.
 - a. The team will add the completed "Pen" to one of the team member's account.
 - b. The completed work will be exported as zip file so each team member has a copy.
 5. The team will review their work and examine the completed "Pen" and its functionality within the editor view to ensure it meets the lesson requirements.
 6. The "Pen" is shared to the **ITWP1000 MCC** Google+ community for this course by clicking on the Share button within CodePen and sending it to **ITWP1000 MCC** in Google+.
 7. Once the "Pen" is shared within the **ITWP1000 MCC** Google+ community, the team members ensure the link to their team's "Pen" is functional and displays correctly within Google+.

10-20 minutes

1. The team logs into the **ITWP1000 MCC** Google+ community for this course and verifies that the "Pen" successfully displays and its link is functional.
2. Students may take time to review their peer's "Pens", but it's not required.

An open discussion about the experience with using CodePen, Google+, and pair programming will take place next class session.

Assessment:

The students will be evaluated on the following:

1. The team members equally switched between the role of the programmer and the role of the navigator.
2. The team actively worked together and created a positive learning environment.
3. The team demonstrated an understanding of CodePen and its use.
4. The team demonstrated knowledge of how to create a web page "Pen" that successfully met the lesson requirements.

5. The completed web page "Pen" was successfully shared within the **ITWP1000 MCC** Google+ community for this course.
 6. Each team member successfully created a CodePen and Google+ account.
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Notes:

Display a working example of a "Pen" on screen while students work on their lesson. If a question arises that the class as a whole can benefit from, it will be answered in front of the entire class and if a quick demonstration is needed, it will be shown to the entire class. This type of lesson will be new to many of the students, so creating a positive and welcoming learning environment is essential.

I will ensure throughout the activity that pair programming is being observed and be readily available to answer any questions regarding the technology being used in this lesson.

This activity is an in-class team activity that must be completed in the classroom environment by the end of the class session. Students are reminded to double check their team's work once the lesson has been completed and before they leave class. Students are reminded to keep their username and password information for their Google+ and CodePen accounts private.