

## **Module 9**

### **Project 4 – JavaScript and Web Applications**

**Purpose:** JavaScript is a scripting language that enhances HTML and CSS. JavaScript has the ability to add unique behaviors to your existing structure and presentation and forms the final part of the Web Trinity. For this project, you will need to build a website using JavaScript and adding some common elements found in most modern websites.

I have been suggesting Codecademy for the HTML and CSS components of web standards but I have never incorporated the website into an assignment. I think everyone should tryout various learning platforms (websites, YouTube, textbook, PowerPoint, notes) and determine her/his best approach for comprehending the material. At this point, I am requiring you to utilize Codecademy for the JavaScript training (5 points) as well as a source of ideas to create a JavaScript program that could be added to your personal/professional portfolio.

#### **Objectives of the Project:**

- Incorporate JavaScript into HTML including comments and alerts
- Manipulate the Document Object Model with JavaScript
- Change HTML and CSS attributes – modify both structure and presentation
- Understand and add validation to web-based forms

#### **Procedures:**

1. Review chapters 1-11 in JavaScript & jQuery
2. Attempt two or more of the JavaScript tutorials in Blackboard
3. Review the W3 Schools JavaScript tutorial ([https://www.w3schools.com/js/js\\_intro.asp](https://www.w3schools.com/js/js_intro.asp))
4. Upload your completed website containing JavaScript to the server and submit a link through Blackboard.

#### **Overview:**

Project 4 requires both web application foundational elements as well as applied JavaScript elements. The first step in building the project is to setup a Google Webmasters account (FREE – do not pay any money or enter your credit card information). In order to complete the registration process, you will need to add a meta tag to your home page and make sure Webmasters can find the file. To be effective, you will need to create two sitemaps (sitemap.xml and sitemap.html) as well as a robots.txt file. Even though not required, in preparation for the final project, you should continue to build your website – adding more content and web pages. Another requirement of the project is add social media links for Twitter, Facebook and Pinterest. You DO NOT need to create a social media account NOR should you link your

personal account to the social media buttons. My recommendation is to use Towson University's social media account handles for the project. IE if someone clicks on your like button, it will actually like Towson University or something similar.

The major components of this project are the applied JavaScript elements. Building off of the contact page you created in an earlier project, form validation will be needed to make sure someone completing the form has the required elements. You will need to make sure the user enters their first name, email address, and two additional formats. Using JavaScript, you will validate after each field to provide immediate feedback. Feedback will be provided through manipulated the DOM and CSS to show helpful text to the right of the form element with a pink border around the form element if an error has been detected. The form information should be saved in local storage, so when someone returns to the website, they will see a custom greeting on the homepage. On a different page, you will add a custom JavaScript game similar to Rock, Paper, Scissors and a choose your own adventure game. You will need to modify the JavaScript game to suit your needs and explain the rules to the user. Example, if your website topics was related to guitars, you might consider constructing a game "Strings, Pick, Bridge" off of the game Rock, Paper, Scissors [<http://en.wikipedia.org/wiki/Rock-paper-scissors>]. The final aspect of the project is to incorporate jQuery. You may build your own jQuery-based function/code snippet or modify one from the Internet. If you modify a jQuery script found on the Internet, you must cite your source as a comment in your HTML, modify the code to fit your webpage (not the reverse), and you must explain the script in detail (5 sentences) as comments in your HTML.

The final aspect of the project may be the most profound and challenging. You will need to find two students to review your work and provide clear feedback and direction to improve your website. In return, you will review their website. You are not a reality TV judge. You have minimal training to provide a critique, but you do have your experience and perceptions of a quality website. Think about information architectures ([towson.edu](http://towson.edu), [frostburg.edu](http://frostburg.edu) and [morgan.edu](http://morgan.edu)) and your own litmus test. The most important piece is to help your fellow student earn the high possible grade – so review the rubric and if something is missing or not beyond expectations, please advise your fellow student on how they could fix/address an objective/criteria to earn maximum points. It also wouldn't hurt to make sure the page validates. If you have any questions or concerns about the rubric or expectations for the project, please email me.

Grading Rubric for Project 4 – (Total 40 points) – If not submitted through Blackboard, 5 points will be deducted.

Objective/Criteria	Performance Indicators						
	None to very little to evidence of skills		Some to less than satisfactory evidence		Evidence is present with little additional support		Beyond Expectations
	0	1	2	2.5	3	4	5
Google Webmaster Setup with sitemap.xml, sitemap.html and robots.txt	No material uploaded	Two or more issues with the uploaded materials	One or fewer issues with the uploaded materials	Screenshot uploaded, sitemap.xml , sitemap.html and robots.txt in the project root (1 of 4)	Screenshot uploaded, sitemap.xml , sitemap.html and robots.txt in the project root (2 of 4)	Screenshot uploaded, sitemap.xml, sitemap.html and robots.txt in the project root (3 of 4)	Screenshot uploaded, sitemap.xml, sitemap.html and robots.txt in the project root (4 of 4)
Social media links (Twitter, Facebook, and Pinterest)	Links not present	Links present but not complete	Links present but not functioning	Links present by contains a type	All links present and working	Links include subject and social media appropriately	Links include the request social media sites and appropriate links
Add Form validation to your contact page (make sure they enter their first name, email address [in the correct format], and two additional verifications. Validate after each field to provide immediate feedback. Modify the CSS to show the border in pink when there is an issue	No form validation	Form validation is present with errors [At least make sure code does not have any errors before submitting]	Form validation works with less than 2 form elements. The CSS provides valuable feedback and modifies the CSS to show a pink border when	Form validation works with less than 3 form elements. The CSS provides valuable feedback and modifies the CSS to show a pink	Form validation works with less than 4 form elements. The CSS provides valuable feedback and modifies the CSS to show a pink	Form validation works with less than 5 form elements. The CSS provides valuable feedback and modifies the CSS to show a pink border when an error is present.	Form validation works with at least 5 form elements. The CSS provides valuable feedback and modifies the CSS to show a pink border when an error is present.

			an error is present.	border when an error is present.	border when an error is present.		
If someone adds their information, create a custom greeting on the home page using local storage, that says Good [Morning, Afternoon, Evening] PERSONNAME on the home page	No personalization	Personalization has errors [At least make sure code does not have any errors before submitting]	Greeting displayed on the home page	Time appropriate greeting displayed on the home page	Individualized greeting displayed on the home page	Individualized greeting displayed on the home page based on local information storage	Individualized greeting displayed on the home page based on local information storage from the contact form
Create a customized Rock, Paper Scissors or Choose Your Own Adventure	Game not created	Game created but not functioning	Game created with programming errors	Game created is not relevant to the final project	Game play has some issues	Game play meets the requirements but is not engaging	Game works flawlessly, related to the final project and entertaining

Objective/Criteria	Performance Indicators						
	None to very little to evidence of skills		Some to less than satisfactory evidence		Evidence is present with little additional support		Beyond Expectations
	0	1	2	2.5	3	4	5
Add a jQuery component	No jQuery component	jQuery present but not functioning	jQuery has programming errors	jQuery is not relevant to the topic or aids usability	jQuery is functional and relevant but has some issues	jQuery's explained source code is missing, but still functions as requested	jQuery is explained and detailed in the html comments. References if utilized were explained.