

Introduction to Scripting Report

by Jordan Christopher Daniel Bailey

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Module: Introduction to Scripting (M4X01010)

Assignment: Website with Javascript Features

Lecturer: Gaynor Thomas

May

Introduction

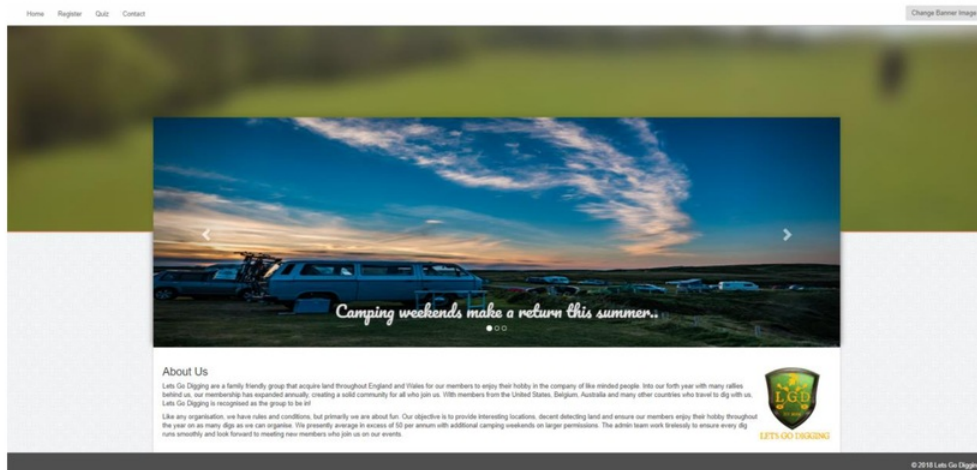
This document aims to report on the development of a website and to analyse the code of the following three Javascript components.

1. Interaction with an HTML form
2. Dynamic visual change to the webpage
3. Password Strength Indication

Annotated listings will be provided throughout alongside screenshots of the website and how each of its components are displayed visually.

Website

The websites purpose is to promote a metal detecting group's events.



Password Strength Indicator

In this section, a password strength indicator has been developed using Javascript. The registration form was created with HTML/CSS using Bootstrap forms. On entering a password, each keystroke determines the strength of the password based on length.

Progress Bar Percentages:

- 3 characters - 25%
- 6 characters - 50%
- 12+ characters – 100%

When no keystrokes have been made and the form is empty, the password indicator remains on Weak. The indicator will remain on weak until 5 or more characters are inputted.

Register

Username

Password

Confirm Password

Password Strength: Weak

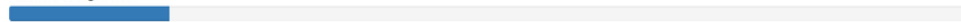


Submit

Password

Confirm Password

Password Strength: Weak



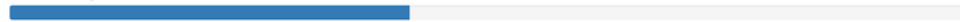
Submit

Between 5-10 keystrokes gives the password a strength of medium.

Password

Confirm Password

Password Strength: Medium



Submit

Any number of keystrokes that exceed 10 will set the password indicator to strong.

Password

Confirm Password

Password Strength: Strong



Submit

A screenshot of the annotated code listings for the Password Strength Indicator are displayed below.

```
// password field function if text changes in the field. Calls the function everytime something is entered in the password field.
function onPasswordChange ()
{
    // gets the password so far.
    var password = document.getElementById("password").value;

    // gets the strength of the password as a percentage
    var passwordStrength = calculatePasswordStrength(password);
    // set the percentage of the progress bar (the progress bar is a bootstrap bar and is being used as a password strength indicator).
    document.getElementById("passwordstrength").style.width = passwordStrength + "%";

    // calculates the password strength label.
    var passwordStrengthString = "Password Strength: ";
    if (passwordStrength < 33)
    {
        passwordStrengthString += "Weak";
    }
    else if (passwordStrength >= 33 && passwordStrength < 67)
    {
        passwordStrengthString += "Medium";
    }
    else if (passwordStrength >= 67)
    {
        passwordStrengthString += "Strong";
    }

    // sets the password strength label.
    document.getElementById("passwordstrengthlabel").innerHTML = passwordStrengthString;
}

// calculate the password strength.
// returns a percentage based on the password strength (doing this in jumps of 8.3%).
function calculatePasswordStrength (password)
{
    // gets the current length of the password.
    var passwordLength = password.length;

    // gets the password length, as a percentage (12 and above is 100%, 6 is 50%, 3 is 25%)
    var passwordStrength = (passwordLength / 12) * 100;
    // if the password length is over 12, then only allow a percentage of 100..
    if (passwordStrength > 100)
    {
        passwordStrength = 100;
    }

    // returns the password strength.
    return passwordStrength;
}
```

function onPasswordChange()

- Retrieves the password using getElementById.
- Sets a variable to the function of calculatePasswordStrength().
- Using an if statement determines which label to display using percentages as the ranges consist of anything below 33 for weak, great than or equal to 33 and less than 67 for medium and lastly equal to or greater than 67 for strong.

function calculatePasswordStrength()

- Sets variable to the current length of the password using password.length.
- Variable passwordStrength is equal to passwordLength divided by 12 multiplied by 100 to provide a percentage.
- Uses an if statement to establish anything exceeding 12 characters long as 100%.

Banner Image Change

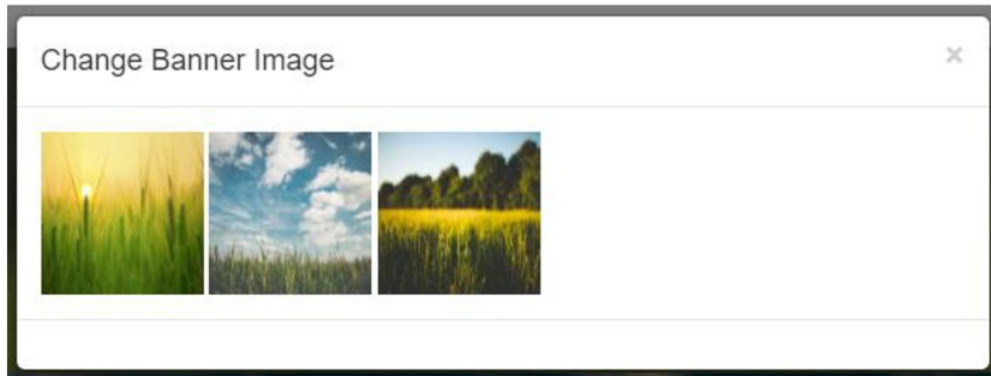
This section aims to analyse the code of a banner image changer. The user is able to change the header by clicking the Button the right of the navigation.

Change Banner Image



On clicking the button, a modal box pops up with 3 predefined header images to choose from. Once a header image has been selected, the function for that header is called.

If a user chooses the first background image, the function `setHeaderImage3()` would be called.



```
// function is called onclick, and updates the background style
function setHeaderImage1()
{
    document.getElementById("header").style.background = 'url("headerImages/headerNew1.jpg")';
}

function setHeaderImage2()
{
    document.getElementById("header").style.background = 'url("headerImages/headerNew2.jpg")';
}

function setHeaderImage3()
{
    document.getElementById("header").style.background = 'url("headerImages/headerNew3.jpg")';
}
```

function setHeaderImage()

- On clicking the modal box and selecting a preferred background image, the function is called for that particular header and uses style to edit the background. This is however limited due to being client side and will revert back to the original header on refreshing the website.

Quiz

The Quiz was created using a series of radial buttons and consisted of 3 multi choice questions to demonstrate functionality. The purpose was to create a series of multi choice questions and

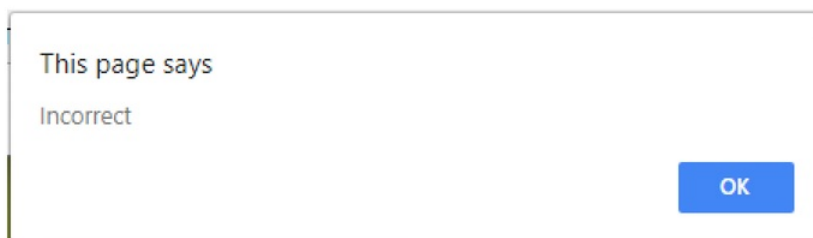
Quiz

Who won the Battle of Hastings in 1066?

- ☐ King Harold II
- ☐ William the Conqueror
- ☐ King Edward I

Submit

Upon clicking an incorrect answer, an alert popup will inform the user and they may try again.



Once the correct answer is chosen, the first question will be hidden using the CSS display property in Javascript.

```
if (chosenAnswer == "1547")
{
    alert("Correct");

    document.getElementById('questionThree').style.display="none";
    document.getElementById('results').style.display="block";

}
else
{
    alert("Incorrect");
}
```

```

function mainQuestionOne()
{
    var radios = document.getElementsByName('radioQuestionOne');

    var chosenAnswer = null;

    // for loop to check radios
    for (var i = 0, length = radios.length; i < length; i++)
    {
        if (radios[i].checked)
        {
            // checks if correct radial button is checked with c
            chosenAnswer = radios[i].value;

            // once correct answer is checked, exits for loop
            break;
        }
    }

    if (chosenAnswer == "William the Conqueror")
    {
        // informs user they are correct
        alert("Correct");
        // if correct, using display will hide question 1 and di
        document.getElementById('questionTwo').style.display="bl
        document.getElementById('questionOne').style.display="no
    }
    else
    {
        // informs user if they are incorrect
        alert("Incorrect");
    }
}

```

Conclusion

Javascript has become ever-increasingly popular the last several years. Developed and released in 1995, Javascript contains a vast amount of libraries, each with their own specific purpose. In the development of the website, Javascript was used to create three components, each fulfilling their own purpose. The first component measured the strength of a password based on field entry. The second consisted of a visual change to the webpage, a background header changer which allows the user to choose between 3 predefined images. Lastly, the third component used Javascript to create an interactive quiz which recorded and displayed the users results.

Introduction to Scripting Report

GRADEMARK REPORT

FINAL GRADE

74/100

GENERAL COMMENTS

Instructor

WEBSITE

Practical Application and Deployment (70)

Component 1 - Password Strength - Quite a nice component to show the user the strength of their password in terms of length. I like that you have used a parameter to another function and returned the value. You could have added a few other features other than length eg not allowing the user to use "password" as their password. 17/20

Component 2 - Banner Image - You have not preloaded the images here, this would cause a delay on slower connections particularly as some of your images are fairly large. You could also just use one function with a parameter - as it is, to add another image would mean writing another function. Economise and use a "this" parameter to a function or similar. This component is a bit limited. 10/20

Component 3 - Quiz - It is good that you have extended from classwork and included more than one question with an end score. . 18/20

(60 marks – broadly 20 per component)

- Overall integration of website – (10 marks) I'm not sure if it's just my browser, but I can't really see the banner image as it's behind the Camping Weekends image. The size of the camping weekends image etc make it a bit irritating to navigate the site - as you have to scroll on every page to get to the content. Consider changing the layout so the content is more prominent. Navigation is OK otherwise. 6/10

REPORT

Analysis (15) – Analysis of the technical development of your Javascript component./ Quite well explained, you have clearly stated the purpose of each function in a technical way. Your analysis of the secon component is limited because the component in itself is limited. 11/15

Knowledge and Understanding of Subject (15) - Annotated code listing.

It's a bit hard to read the annotation as they are grey on black! Neverthe less, clearly stated on the password and quiz sections in particular 12/15

OVERALL MARK: 74%

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