School of Computer Science and Electronic Engineering

ICE 1411/4111 Web Technologies 2024

Build a Personal Website Assignment

Due: Thursday 2nd May 2024 at 16:00 UTC+1
Contribution: 50% of the module grade

Course Instructor: Dr Peter Butcher (p.butcher@bangor.ac.uk)

Introduction

The main assignment for this module is worth 50% of the overall grade and your task is to create a personal website which should ultimately be suitable for publication online. The content of your website is up to you, but you must check that it can fulfil the requirements of each task before commencing. You are required to submit your website idea to the course organiser before beginning work on it to ensure that your idea is suitable.

For example, you could create a website to showcase yourself. It could end up being a portfolio website, including a CV, your interests, or a website presenting something that you are particularly passionate about.

While the subject matter of your website is left to you; this assignment will present you with tasks of increasing complexity which you must incorporate into your project. Each task below has a corresponding mark contribution which should guide you.

The overall purpose of this assignment is to test your HTML, CSS and JavaScript skills based on the material covered in our labs and lectures throughout the semester. You are encouraged to do further reading and research to improve your websites beyond the brief, and assistance will be provided by the course instructor should you wish to push the boundaries of what is expected.

Ultimately, this assignment allows you the creative freedom to produce something unique that you can be proud of and end up using should you wish to. Many past students have released their websites online and continued working on them beyond the end of the course.

You are not permitted to use a WYSIWYG editor of any kind to produce your sites (e.g. Dreamweaver, wix.com, WebFlow etc.) They should be hand crafted. Any evidence that you have used such an editor will result in a heavy reduction in your final mark.

To succeed in this assignment, you should follow the recommendations, references and good-practice guidance from the lectures and lab scripts. Should you find yourself in any difficulty, you should ask for help from the course instructor as soon as possible so that you can make progress, and hopefully enjoy the creative process more.

Prerequisites

Before you begin writing any code, you should first submit your idea for approval to the module organiser on Blackboard. You will receive approval, feedback and any required modifications to your idea via Blackboard.

You should produce sketches of each page of your site with as much detail as possible. Annotate anything which is possibly not clear and describe all functionality with text or additional diagrams.

Your sketches do not have to represent the final layout or structure of your website, they are a tool to begin the creative process, serving an illustrative purpose to decide whether your idea is suitable. They will also serve as a guide when you come to write your code. Your ideas can change, but this step will ensure that you do not lose out on any marks by not including the required features.

Spend time on your sketches, and while you make them, think about the end-user, and how they will use your site.

You can create your sketches by hand, or with computer packages such as Adobe Photoshop or Illustrator, Affinity Designer or Publisher, or online tools such as Figma, Vectr or Photopea.

Read through each task below, understand what you're being asked to do, and then begin sketching!

Once your idea is ready to be approved, submit it on Blackboard and await approval before continuing. If you do not hear back about your idea approval within 1 working day, please contact the module organiser.

Project Requirements

Your website **must**:

- Be original.
- Consist of four or more pages.
- Appropriate page titles and `meta` tags in the `head`.
- Use correct and consistent semantic HTML5 elements throughout.
- Use a single external stylesheet for your core styles.
- Include a `header`, `footer`, and `main` on every page.
- Have consistent navigation on every page (to and from every page on your site).
- Use a web-font somewhere on your site (e.g., fonts.google.com).
- Contain links to external websites or resources (pages not on your site).
- Show effort towards responsive and accessible Web design, including SEO.
- Be suitable to host online*, therefore content should be **original** unless permission is sought, or content is considered “fair use”.

*Hosting your website online is not compulsory but will be taught.

Your website **must not:**

- Contain inappropriate content.
- Use content or code copied verbatim from elsewhere.
- Go against the best-practice advice given in this course (e.g., No inline styles).

Your website should contain the following **interactive content:**

- An interactive 3 x 3 image gallery created from a JSON object (see task 4).
- An interactive image carousel generated from a JSON object (see task 5).
- One or more additional interactive features (see task 6).

Additional credit will be awarded for rich, interactive content, carefully considered design aesthetics and well written code.

Task 1 – Get Your Idea Approved

As described in the prerequisites for this assignment, you must first get your website idea approved by submitting:

- A project title
- A short description of less than 200 words
- Sketches of each of the 4 pages you will create. These sketches can be hand-drawn and scanned or created using a computer design package. We recommend creating a PDF of your intended design, detailing each page.

Submit your project proposals as a PDF or .docx file on Blackboard in the **Project Proposal Submission** point. You will receive feedback on your proposal shortly thereafter.

Once your idea is approved, you will know that your idea is task appropriate, and that your sketches are adequate to create the output necessary for a good grade.

Please note: Your ideas are allowed to change. If you are unsure whether your new idea fulfills the project requirements or if you decide to alter your topic, speak to the course instructor. It is important to check in case a design change you make affects your ability to attain a satisfactory grade.

Task 2 – Structure and Content - [**20%**]

Your website should consist of at least four pages of well structured, semantic HTML5 and include high quality original content.

The website should be suitable to host online, and therefore must make use of accessibility features, search engine optimisation (SEO), and responsive design techniques.

Even if you only attempt the basic parts of this assignment, you should submit at least four pages. If you submit less than this, your grade will be scaled accordingly.

Your website project directory should be structured as advised during the lab sessions, separating images, styles and JavaScript from your HTML.

Refer to the project requirements above as a guide to what each page should consist of at a minimum.

As a guide, you should aim for roughly 150-250 words of original content (or equivalent) per page.

Task 3 – CSS - [**25%**]

It is important that the core theme (style) of your website uses a single external stylesheet, imported on each page with a `link` tag as instructed in the lectures and labs. Styles relating to a single page may be included in additional stylesheets on the appropriate page.

The look and feel of your site should be consistent across all pages. Make use of classes and other CSS selectors to achieve this.

Test your website works on devices with different screen sizes (laptops, smartphones and desktop PCs) where possible when incorporating responsive techniques.

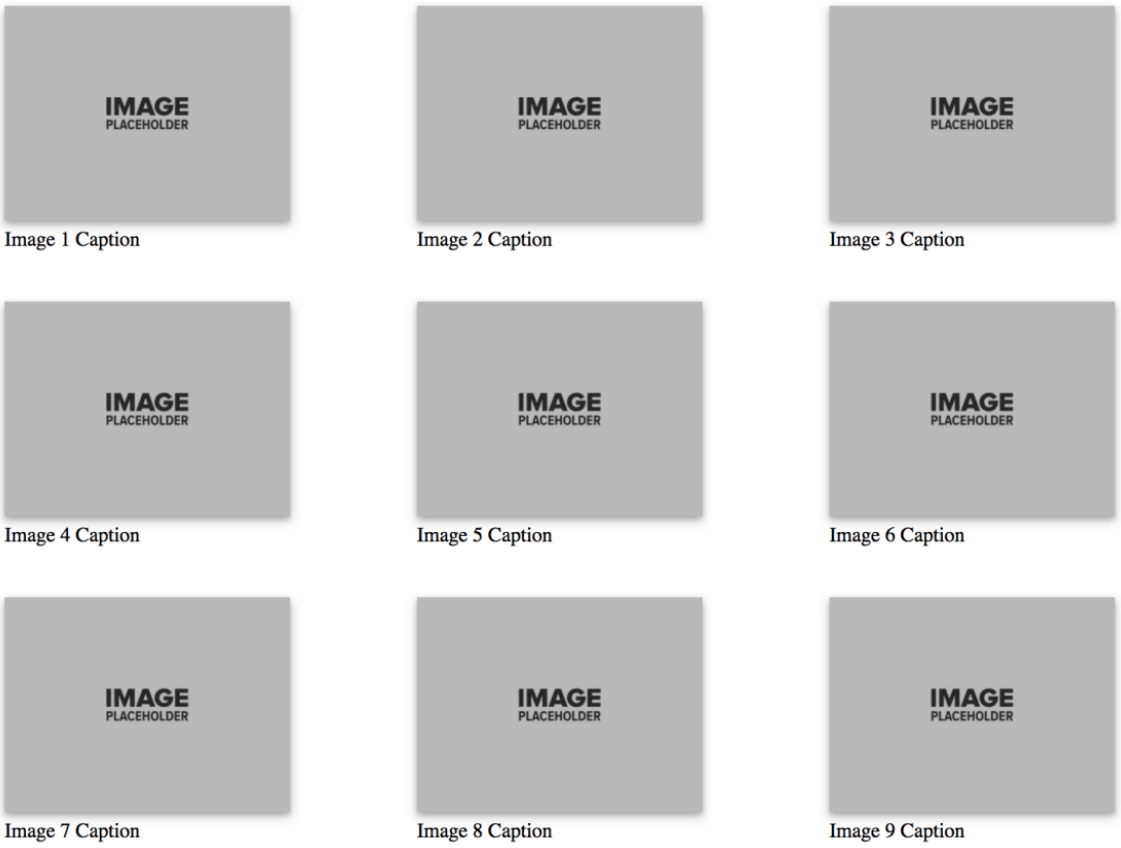
Some of the marks in this section will be awarded based on design quality. This will require a good combination of well-structured HTML, and carefully considered aesthetics. Think carefully about content placement, the format of any images you use, and always refer to existing websites you use and enjoy for inspiration on design patterns that work.

Task 4 – Building an Image Gallery from JSON - [**25%**]

Using techniques learned in the lectures and labs:

- Create a JSON object in a separate file containing an array of 9 images relevant to your site's theme. Include a description of each image to be displayed.
- Using your own JavaScript or a framework or library of your choice, parse this JSON object to display a 3x3 grid of images on **one** of the pages of your site.

The gallery should display each image as a thumbnail with its description below (or overlayed), in a 3 column, 3 row grid as shown below. Each image should act as a hyperlink to the full-size image (either in a new page, or a floating modal). Use CSS to style the gallery to your liking.



Task 5 – Build an Interactive Carousel from JSON - [**15%**]

In addition to your 3 x 3 image gallery, you should also create an interactive image carousel using the same, or a different set of 9 images and descriptions. You may use the same JSON loading code you wrote in task 4 to load the images and descriptions into your JavaScript code but instead of displaying them in a grid, you should display them in a carousel.

The carousel should have buttons to move to the next or previous image. Additionally, you may wish to add pips to jump to a specific image or add an auto-play feature.

Note: You may use an existing CSS or JavaScript carousel library for this task, but you must ensure that images and descriptions are loaded from a JSON object as instructed. Creating your own carousel from scratch will constitute a higher grade for this task.

Task 6 – Add some Original Interactive Content - [**10%**]

For this task you will be awarded credit for either extending the functionality of either of the components you created in tasks 4 or 5 in a manner of your choosing, or for creating other interactive content.

For example, adding pips or an auto-play feature to the carousel would earn credit towards this task.

Other ideas include:

- Creating a pull-out menu system on your mobile site using CSS media queries, transitions and animations.
- Using a visualisation library to display interactive charts and diagrams of a concept you have described in your content.
- A mini-game or widget that is content appropriate.
- Etc.

Ask the course instructor for inspiration if you run out of ideas.

Task 7 – Website Testing and Validation - [**5%**]

Create a testing report in a Word document or PDF and include:

- Live URL:
  - If you have hosted your website online, for example on GitHub Pages, provide the URL in your report.
- Description of the website:
  - Describe in a few words what your website is about, and why you chose this topic.
- Findings from testing:
  - Cross-browser compatibility: Test your website out in multiple browsers (desktop and mobile if possible) and report the results from testing. Use screenshots to aid you if necessary.
  - Peer review: Ask 3 or more of your peers to use your website and give constructive feedback on its content, design and usability. Present this feedback anonymously in your report and suggest ways in which you would improve your website based on this feedback.
- Findings from validation:
  - Run your website through the W3C HTML and CSS validation tools and attempt to fix any errors or warnings you are presented with. If you have made every attempt to fix issues yet some remain, document these in your report and explain why you have not been able to fix them.
- Documented features:
  - Describe the nature of any additional features you wish to present to the instructor in your report if they are not obvious when using the website. Maybe you implemented a feature which requires some interaction to initiate it. Ensure that these features are well documented to ensure you are credited for the work.
- References:
  - Include a list of references if you have used any third-party CSS or JavaScript libraries or APIs when building your website. Credit all image, content or code owners whose work you have used on your website.
- Reflection:
  - Reflect on your website in a few words, and explain what you like, dislike, and what you would improve about your site.

Submission Process

You should submit the following to Blackboard:

- A compressed **.zip** file of your entire project with the filename:

  `username-assignment1-files.zip`

  replacing “username” with your username. Include the complete directory structure necessary to load your website in a browser including all HTML, CSS, JavaScript and asset files. Any format other than **.zip** will not be accepted, and will receive a zero grade.
- Your testing report as a PDF or Word document named:

  `username-assignment1-report.pdf` or `.docx`

  replacing “username” with your username.

Plagiarism and Unfair Practice

All deliverables will be checked for plagiarism.

Plagiarised work will be given a mark of zero. Remember when you submit, you agree to the standard agreement:

This piece of work is a result of my own work except where it is a group assignment for which approved collaboration has been granted. Material from the work of others (from a book, a journal or the Web) used in this assignment has been acknowledged and quotations and paraphrasing suitably indicated. I appreciate that to imply that such work is mine, could lead to a nil mark, failing the module or being excluded from the University. I also testify that no substantial part of this work has been previously submitted for assessment.

Late Submission

Work submitted within one week of the stated deadline will be marked, but the mark will be capped at 40%. A mark of 0% will be awarded for any work submitted 1 week after the deadline.

Please note that the course organiser does not have the power to grant extensions. Extensions can be requested online via the Request Centre on MyBangor. Information about acceptable and unacceptable reasons for being granted an extension can be found in section 8 of regulation 1 in the University’s Special Circumstances procedure.