SET08101 Web Technologies

Design and Develop a Website

Learning Outcomes Covered:	LO1: Describe Internet and World Wide Web technology standards LO2: Identify and apply an appropriate web page development methodology LO3: Demonstrate competence in the use of authoring tools & markup languages. LO4: Demonstrate competence in Client-Side programming LO5: Demonstrate competence in Server-Side programming
Assessment Type:	Practical Assessment / Demonstration
Overall module assessment	100% Practical Assessment
For this assessment:	40% Part 1; 60% Part 2
Assessment Limits:	Guidance Provided for Each Part
Submission Deadline:	Part 1 Friday, 28 February 2025 at 3 p.m. Part 2 Submission Monday, 28 April 2025 at 3 p.m.,
Submission Method:	Via Moodle
Turnitin on submissions:	Not Applicable
Module Leader:	Rachel Salzano
Tutor with direct responsibility:	Rachel Salzano
Return of work and feedback:	Feedback on submissions will normally be provided within three working weeks from the submission date.
Notes:	• You are advised to keep a copy of your submitted assessment. • Please read and follow the 'Fit-to-Sit' guidance if you need to request an extension

Assessment regulations and academic integrity

The University rules on Academic Integrity apply to all submissions. The student academic integrity regulations contain a detailed definition of academic integrity breaches.

- You cannot knowingly permit another student to copy all or part of your work.
- You must not share your work with other students. This includes posting any of your work in any repository that is accessible to others (such as GitHub) and applies also after you have completed the course.
- Asking coursework-related questions in external online forums (such as Stackoverflow) is NOT permitted.

By submitting the report, you are confirming that:

- It is your own work except where explicit reference is made to the contribution of others.
- It has not been submitted for any module, programme or degree at Edinburgh Napier University or any other institution.
- If you have made use of generative Artificial Intelligence (AI) tools, you have done so only as allowed for this assessment, and have provided the relevant details in the coursework declaration.

Assessment Specification

(a) Academic skills support: In advance of submission, you can access the support of the academic skills team. They can help you with any aspect of the assessment that you might struggle with, that is not content related. For example, they can help with time-management, effective reading and note-making, and any aspect of academic writing that you might struggle with. This support is provided through workshops and individual appointments which are bookable online via MyNapier: Improve your Academic & Study Skills (napier.ac.uk). You can also directly email the Academic Skills Adviser, Hannah Awcock, h.awcock@napier.ac.uk for any specific academic skills support you require.

(b) **Use of generative AI:** Please include the following declaration on the first page of your submitted coursework:

Declaration
I declare, in accordance with Edinburgh Napier University's Academic Integrity Regulations that: except where explicit reference is made to the contribution of others*, this assignment is the result of my own work, and has not been submitted for any module, programme or degree at Edinburgh Napier University or any other institution.

*IMPORTANT: Contribution of includes use of generative Artificial Intelligence (AI) tools. Ensure you have read the University Guidelines for Students on AI & Writing Assistant Tools). Please declare here whether you have used such tools, and to what extent:

☐NO I have not used such tools

☐YES I have used such tools and I have provided details and included sample prompts and responses <below/in an appendix>.

Use	Permitted?	Advice	How to acknowledge use
As a search engine	Yes	Cross reference AI output for factual accuracy in authoritative texts e.g. text books, reading lists, peer-reviewed publications	Acknowledgment not required
As an ideas generator/conversational partner/debating partner	Yes	Cross reference for accuracy as above AND check for bias, irrelevant or too generalised ideas.	On cover sheet: "I used [tool name] on [date] with the question [insert question/prompt used] to give me ideas, of which I used/adapted into [idea name] in this submission"
To suggest a submission structure	With caution	Consult the assessment brief first to ensure your structure follows the recommendations and meets the learning outcomes.	On cover sheet: "I used [tool name] on [date] with the question [insert question/prompt used] to get a submission structure, which I used/adapted into [part name] in this submission"
To make suggestions to improve your communication of your ideas	With caution	Always start with your own writing first to develop your own thinking. Use the AI tool to get quick feedback and use your judgement whether its advice is appropriate for your submission. Work on one paragraph at a time.	On cover sheet: "I used [tool name] on [date] with the question [insert question/prompt used] on [section name(s)/whole submission] to get feedback on my writing, which I then improved based on its advice on [spelling/grammar/ vocabulary/etc.]
To generate content	No	Never ask an AI tool to generate parts of your submission from scratch. Do not input assessment brief or rubric into AI tools and ask it to generate your submission.	

Web Technologies Coursework Specification

Overview

The assignment for this module is a single group project that is split into two parts. This document details both parts. You will be assigned to groups of 5 students and will be responsible for determining how to organise your group. Consider whether you need set roles (e.g., leader, project manager, etc.) or if you will work better without them. Reflect on this in Part 2's report.

The objective is to demonstrate your understanding of **client-side web development** and **mastery of HTML, CSS, & JavaScript**. You will achieve this by completing a group project in which you **design, implement, and evaluate a statically hosted web site on the topic of fun** (essentially build something fun). **A good place to start might be an online game**[1] (story-telling hypertext games are a good way to demonstrate use of web technologies) **or a secret message coding site** (using javascript to encode/decode messages using classical codes and ciphers) **but you can interpret the topic more broadly if you have an idea for something else that is fun** (perhaps related to an interest you have or pastime that members of the group enjoy).

You should carefully consider the nature of the task, and plan a set of pages, a visual design, and user interface elements that provides your users with a good experience. **Each member of your group will be responsible for one set of features/functionality on the group's website. This may look different depending on your group's project.** For example, if your group makes an online storytelling game, each member might be in charge of a different section of the story (at least two pages in a story). Or if your group makes a secret message coding site, you might have each person in charge of a different secret message to be decoded. Or if your group makes a website dedicated to pub quizzes, each member might be responsible for a single pub quiz that is present on the site. **Each member must be able to demonstrate use of HTML and JS in the feature/functionality they are responsible for.** If appropriate you may also include additional features or functionality and make use of third-party & browser-based APIs as necessary, to implement your project. As we are evaluating your core skills it is advisable at this stage not to use frameworks like react.js as this can obscure demonstration of your own JS skills.

Your implemented site must be hosted and deployed within GitHub pages which provides reliable and free static web hosting. It is a good idea to research similar websites, if they exist, that you can use as a benchmark against which to measure the functionality of your own and which might provide inspiration for how other developers have approached similar sites. It is also advisable to discuss any ideas that you have for extensions to the basic requirements with your module leader during timetabled contact time, such as labs, as this is an opportunity for formative feedback to help you to perform well and to achieve a decent grade.

The first part of the assignment is a report which will focus on the features,

[1] See https://siwells.github.io/cyoag/ for the deployment of an example of a simple hypertext game (See https://github.com/siwells/cyoag for the source repository)

analysis, design, and plan for implementation of your site & is worth 40% of the total mark. The second part of the assignment is the implementation and deployment of your design and is worth 60%.

It is expected that what you design might deviate from your final implementation and that techniques you discover later in the module might cause you to re-think or re-approach decisions you have already made. You might discover that your initial idea needs to be completely replaced with something more achievable. This is fine and gives you an opportunity for critical reflection in your final report.

Above all, this coursework should be fun, so use your imagination, and give your creativity a free rein. Invention and originality will be rewarded by the marking scheme. I hope you enjoy working on it.

Part #1

For this part of the assignment, you will develop an idea for your group's fun website alongside a design and a plan for achieving an implementation of that design. These will be presented in a single report. You will likely want to develop a satisfying user experience, and utilise a visually pleasing design, so consideration of your users' interactions with the site at this stage can be useful. **The report will be submitted individually, with each team member giving a summary of the overall website design (for the group) and then providing specific detail about the feature/functionality they are responsible for.** While the summary of the overall website may be similar to that of your group members, it should be an individual summary, not a collectively written summary.

Before you begin, it might be worth doing research into the kinds of features that other fun sites support or possess, especially related to the feature/functionality you are individually responsible for. Don't get too ambitious though as you have a limited amount of time and might be looking at what teams of well- resourced professional developers have achieved over a longer timescale.

Remember that at this stage in your career you are learning about your own skills, about your ability to turn your ideas into effective implementations, and about how long it takes you to do these things successfully. As a rule, it is worth having a simple, core plan containing the essential, minimum viable functionality. Then you can supplement the core plan with more elaborate functionality if you make better progress than you expected.

Your deliverable for this part of the assignment is an individual, short, and well written PDF report. An appropriate target length for this report is a single document of no more than 8 pages of text in 12pt fontsize (images do not contribute towards the length guide). The size of the report is a function of your effort and work and you will not be penalised for going over the guide length by a reasonable amount. Your report must include the following:

1. A description of the **overall site that your group is planning** with enough background context for your reader to understand what you are trying to do.
2. A summary of any background research into other similar sites, or useful technologies, libraries, or APIs that you have individually investigated with a description of how this has contributed to your group's project idea and design. **This can be related to the group's site as a whole as well as for the specific feature you are responsible for in the group.**
3. A list of the features/functionality in the group's overall site and some discussion of why each is included. **A clear description and discussion of the feature/functionality you will be responsible for in the group is required.**
4. Site organisation and/or navigation tree diagrams with associated discussion and explanation of how your group plans to organise the pages that make up the site and how a user might typically navigate through those pages. Your

diagrams can be combined if that is a useful way to present the organisation and navigation for your site. These diagrams may be hand-drawn and scanned/photographed, or created using any image/diagram software as you think fit. **The diagrams and explanation you provide must include the specific feature/functionality you are responsible for, but they can also address site as a whole.**

5. A sketch/wireframe/low/mid/high-fidelity prototype of an initial user interface for your group's site and some commentary on the motivation for your design, i.e. how does your design address the feature/functionality for which you are responsible? **You only need to include the design of the features/functionality that you are responsible for, but if you choose to include design for the whole site make sure you attribute the design to the correct individuals in your team.** If your designs are hand-drawn then they can be scanned/photographed for inclusion in your report.

6. A project plan that demonstrates how you will organise your effort and time to achieve your goals. This plan can be presented in any appropriate form, e.g. a list of dates and tasks, a gantt chart, and/or a narrative description. **It should include your personal plan to complete what you are responsible and an overall group plan.** The group plan can be less detailed, but should give an indication that as a group you have discussed appropriate target completion dates for all parts of the project.
7. (Optional) As appropriate: any additional sections that you deem fit to describe your group's project, **with specific attention paid to the features/functionality you are responsible for**. For example, if you have decided to implement a particular feature as an extension to the core requirements then this would be the place to report on it. Similarly if you intend to save data within the browser, then some description of the kinds of data that you intend to store, how you will store it, and how it will be structured, should be reported on.

Your report must be uploaded to Moodle by the deadline of **3PM on Friday 28th February 2025**.

Part #2

As a group, you must implement your group's planned site from part #1 using HTML, CSS, and JavaScript. You may use any other technologies such as libraries, frameworks, third-party APIs, and browser APIs as appropriate. However, your entire site must be deployed through GitHub pages. When you have used tools, libraries, or APIs other than pure HTML, CSS, and JavaScript written by any members of the group, you must be able to justify why you used them. Remember that this assignment is evaluating your skills on these core technologies and that use of readymade code (libraries/frameworks) can leave you with less opportunity to demonstrate what you can do.

Your deliverables for this part of the assignment are the following:

1. A public deployment of your site using the GitHub pages hosting feature. (You can choose one member of the group to deploy the full site

on their GitHub pages, but each member should be testing the features/functionalities they are responsible for using thir own GitHub pages).

2. A zip archive containing the complete source code and all resources for your site submitted to Moodle.

3. A short (approximately 4 pages in 12pt fontsize) **individual PDF report from each member of you group** that covers the following:

    A. Clearly identifies the URL (web address) of your deployed site.
    B. Explains the differences between the initial plan as outlined in part #1 and the final implementation. There is no penalty for deviating from your group's initial plan, or your specific plan for the feature/functionality you are responsible for.
    C. Describes any features that you would add or improve to enhance the project, given more time, and what you now know. You should focus on the feature(s) you were responsible for in the group.

    D. Reflects upon the challenges you faced and achievements you made during this assignment. Here you can discuss both individual achievements and challenges you faced as well as reflect on how the groupwork affected the assessment. This should include what you learned about how you work in that type of team as well as what you might have wanted to go more smoothly. While many future careers will involve individual work, you will also likely be part of a team where all the individual work comes together to create a final product. Reflecting on how you work in different team environments will be useful when you go on to work with different types of teams and personalities.

4. A short screencast with voice-over of you demonstrating the features of your site (see the "Demonstration Screencast" section below for more details). **Each member of the team should be demonstrating the feature they were responsible for.** This can be done in many ways, including the group recording it all together, simply switching the presenter when you demonstrate a new feature, or individual members of the group recording their portions and then editing them all together into a single screencast.

A single zipped archive containing your sourcecode, report, and screencast must be uploaded to Moodle by the deadline. **Each member of your group needs to submit these items.** This demonstrates that the group as a whole is working together, and allows for the individual submission of the report.

The deadline for submitting part #2 of the assignment is **3PM on Monday 28th April, 2025.**

Demonstration Screencast

Because of the size of the class, we cannot easily do timely face-to-face, demonstrations of our work. So, we will produce a single short screencast recording of our site and its features being operated under normal circumstances. The aim is to show off what works, to draw attention to things we are pleased with, and to use the voiceover to explain our design thinking.

Note that a screencast is simply a video recording of your screen as you interact with your web-app. This should include a voice-over of you describing what you are doing and why your app works the way it does. Screencasts are straightforward to record on most major platforms, Windows 10 includes the game DVR feature and Mac OS enables screen-recording via the QuickTime Player application. A free, cross-platform solution, with more functionality is the Open Broadcaster Software (OBS Studio[2]). Instructions for producing your screencast will be posted to Moodle to support you in producing this.

Note that one of the normal goals of the demos is to establish that the work you've submitted is your own, but it is also a useful mechanism to avoid misunderstandings and help ensure that your work is marked accurately. As a result, we may, exceptionally, ask some students to demonstrate their work live, either in person or through Teams.

Group Work

Group work can result in some members of the team putting in more effort than others. This can happen in the workplace just as easily as in university. For this assessment, the possibility is mitigated in two ways. One, each member of the team is responsible for a minimum of one of the features of the website and must explain that feature's purpose in the screencast. And two, each member of the group is writing a report that includes a reflection on the challenges faced and achievements made during the assessment. This is a place where you can reflect on group dynamics and responsibilities. If a member of the group is not contributing to the same level as the rest of the group, this can also be brought to the attention of the module team during contact time.

Individual students in a group may receive different marks based on contribution to the project. This contribution will be determined via the report, contribution to the demonstration, and tutor observation during tutorials. Please note that we are unable to provide you with information about the marks of other students, but scaling based on peer assessment will be applied to marks as necessary.

[2] https://obsproject.com/

Feedback

Feedback is very important to your learning process. During this module you will experience feedback using a variety of modes and at various times. The most common type of feedback that you will get is verbal feedback during timetabled contact time throughout the term. The aim of this is to help you to improve your practical skills and to help you to think critically about your progress. **This is why attendance at lab sessions is important as these provide a great opportunity to discuss your ideas with teaching staff in a less pressurised context.** Verbal feedback is as important, sometimes more-so, than written feedback, and should neither be discounted nor disregarded. If you have specific things that you want feedback about then it is critically important that you ask for that feedback.

You will get written feedback after your hand-ins along with your grade. Generally, this is briefer than the verbal feedback you will have already received and is primarily aimed at helping you to see what you did that helped you to achieve your grade. There may also be suggestions for improving things that you should consider in the context of your work. Under ideal circumstances you will receive written feedback via Moodle within three working weeks of the submission deadline.

Grade Guide

The marking schemes are devised so as to reward those who go beyond the core taught material by integrating their own self-directed learning and discoveries. As a general rule, the more functionality, the better the mark, however your functionality should be consistent with a cohesive overall design, professional presentation, and pleasing user experience. Note that, because this is a project, rather than a mere test of your capabilities, you have significant leeway for what you include in your final submission (beyond the specified requirements).

The following grade guide gives you a coarse description of how to interpret your overall percentage grade (for the entire module). When interpreting your feedback, please don't think in terms of "where did I lose marks?" or "did I get marked down for that?" but instead you should consider that you start off with nothing and incrementally approach perfection. A better question to ask yourself is "what could I have done to improve my work?" or "how could I refine what I have done to mark it even better?". Thinking critically about our achievements ourselves is how we develop a professional sense of the quality of our work, rather that relying on external validation of whether it is good enough. Projects like this are designed to encourage that kind of reflection and professional development.

The following scale will give you some idea of the overall grade bands:

0-40% There are a number of ways to achieve a mark in this band, but generally you will either have failed to create a working practical implementation to a minimal standard in either part of the project, or have failed to submit a report

that is written to an acceptable standard in either part of the project, or some combination of both.

40-49% Work in this grade band is considered to be up to an overall, acceptable, but minimal standard and constitutes a bare pass of the module. Practical implementations will cover at least the core requirements in each part and reports will be written to a minimally acceptable standard of content and presentation.

The minimum expectation for a pass mark is that all required components (e.g. reports, code, screencast) are submitted for the associated hand-in. Additionally, the implemented site must include multiple, hyper-linked pages (at least one for each member of the team) with some CSS and JS functionality.

50-59% Work in this grade band is work that has achieved a good standard. This means that there is evidence that you are applying some depth of knowledge to the goals that you set out to achieve and are developing ambition in relation to what you build.

60-69% To achieve a mark in this band you will have produced work that is to a very good standard. As a rule, **most students will achieve in the mid to upper end of this grade band**. This indicates that you are developing significant depth in your understanding of the domain as a whole, as well as significant technical understanding of underlying technologies. You will also be developing reliable critical faculties that enable you to realistically appreciate what you have achieved and how it can be improved.

70-100% A submission in this mark band represents excellent work. Above 80% you should consider your work to be exceptional, and above 90% your work is exemplary and tending towards perfection. To achieve a mark above 70% you will have integrated and extended the lab work covered in class to offer an excellent level of functionality, both in terms of the number of features and their quality of implementation. Your reports will explain your thinking, in relation to both design and implementation, with clarity. To achieve above 80% then you should be aiming to exceed the taught content of the module and introduce ideas and findings from your self-directed learning.

You should think strategically about how to approach this assignment. The grade guide is cumulative, i.e. to get a higher grade, you must also have achieved the functionality required to attain a lower grade. A lower-risk strategy is to identify the core features that you think will attract a pass mark then aim to complete those features as soon as possible. Once you believe that you've secured some work at the pass level then you should iterate over your working solution to improve those features and try not to break things.

Try to avoid accusations of plagiarism:

- Do not copy and paste text from the Internet.
- If you use code from the internet or from generative AI, acknowledge it in comments in the code and in the report.

- After reading reference material, lay it down where you cannot see it and write your own interpretation in your own words.

Indicative Marking Scheme (Part #1 – Individual work)

Topic	Criteria	Marks
Core Criteria (Individual Mark)	A description of your group's site together with a summary of any background research & exploration of how such research relates to your group's site	**/20**
	* List of features (whole site) * Organisation/Navigation Diagram (whole site) * Initial UI sketch & commentary (your individual responsibility) * Implementation Plan (individual responsibility)	**/60**
Above & Beyond (Individual Mark)	**The following is indicative:** Design of features that go beyond the idea of the core topic. For example, use of sound, graphics, data-storage, external data sources, APIs, or extending the remit to include elements of entertainment, education, serious games, &c.	**/20**
		Total /100

Indicative Marking Scheme (Part #2)

Topic	Criteria	Marks
Core Criteria	**(Mark for Group)** Working implementation and subsequent deployment of your planned design. This includes the development & integration of an appropriate user interface & associated user experience.	**/65**
	A report containing: **(Mark for Individual)** * The URL of your deployed website * Explanation of differences between initial plan and final submission * Description of features for enhancement * Reflection upon challenges faced * Reflection upon achievement made	**/10**
	A screencast that: **(Mark for Group)** * Demonstrates use of your site	**/5**

Above & Beyond	**(Mark for Group)** **The following is indicative:** The implementation of any features that go beyond the idea of the core site. For example, your use of sound, graphics, data- storage, external data sources, APIs or extending the remit to include elements of entertainment, education, serious games, &c.	**/20**

Total /100