

COS10026 Computing Technology Inquiry Project

Assignment Part 1, Semester 1, 2022

Develop a simple static web site

Due Date	10 pm on Monday in Week 7 (Late submission penalty: 10% of total available marks per calendar day)
Contribution to Final Assessment:	40%

Important: All work must be done by your group. Submissions are automatically checked for similarities. Unexplained/acknowledge similarities may constitute plagiarism. Carefully read the section on plagiarism in the Unit Outline before you proceed (including the section forbidding sharing your work with others).

Purpose

This assignment will familiarise you with the techniques and skills involved in designing and creating static webpages, utilising validated HTML and CSS created with a standard text editor. You will deploy these Web pages on a Unix / Apache server. This should be done in a way that keeps HTML content and CSS presentation separate, as discussed in the lectures. **No JavaScript is to be used in this assignment.**

In this assignment you will develop a Web site that describes a Web-related Technology. Each group will be assigned a *different* topic. Your topic will be assigned by your tutor in Week 1 or Week 2.

Essential Requirements

Your website will have:

- An introduction to your topic (**index.html**)
- A more detailed description of the technology (**topic.html**)
- A quiz page related to your topic (**quiz.html**)
- A page which lists any enhancements you have made (**enhancements.html**)

You will also include

- A CSS file that styles your website (**style.css**).

You must call these files **exactly** by these names, otherwise the marking program will not know they exist!

In general the web pages must:

- have relevant content
- include the HTML markup required
- validate to HTML5 without errors

- have a <head> with Title, Meta tags as specified in template (including author)
- be styled by a validated CSS3 file
- be linked to each other via a menu
- be deployed on Mercury.

All web pages in your website should have a consistent layout and navigation. Where “in-house” **templates** have been defined in this unit (e.g. for meta-data; tables; etc.) these should be followed. These include accessibility alternatives.

The HTML in your Web pages **must** validate against the W3C HTML5 validator (<http://validator.w3.org/nu>) .

Pages should **not contain any deprecated elements/attributes** (e.g. <i> ,). Do not use iframe elements in your assignment.

Note: Generic structural elements like div or span should only be used where there is no more meaningful HTML5 element (e.g. section) that is appropriate.

1. Introductory home page (*index.html*)

This page should contain:

- An appropriate title.
- A *background* graphic (use CSS to do this).
- A menu that links to the other pages on your Web site. This menu should appear on every page of your website.
- A header containing appropriate content. This header should appear on every page of your website.
- A footer that includes an email hyperlink to your student email address. This footer should appear on every page of your website.

2. Topic Description page(s) (*topic.html*)

You should write at least 150 words on your allocated topic and the content should be appropriately marked-up with headings, paragraphs, sections, subsections etc.

The page must contain:

- Hierarchically structured headings of at least 2 levels. (e.g. make sure your H2 is below an H1)
- More than one <section>
- An <aside> with appropriate content, i.e. a section of a page that consists of content that is tangentially related to the content
- At least one appropriate related to your topic. This image should be less 100k. The image should be in a <figure> element with <caption>
- A table containing some data related to your topic.
- At least one ordered list
- At least one definition list

Your content should briefly and concisely explain such as:

- What is the technology? Its purpose / function? Major points / features ?
- Who developed it? When? Why?
- What groups, if any, are responsible for managing it?
- Explain its growth or decline. Predict the future for the technology.
- What are related technologies? Compare / contrast with other technologies.

If you decide to have more than one topic page call them *topic1.html*, *topic2.html*, etc..

Note: You are not expected to create the “definitive reference” on your topic, but your information should be accurate. Incorrect information will reduce your mark.

Sources / References:

- Good resources for starting your research include Wikipedia, Google and online databases in the library. (You should use at least 3 sources of information. Do not just use Wikipedia.)
- Use primary sources for information, but then write the content in your own words.
- Please do NOT copy your text from other websites. You can quote / cite key text from another site, and there are appropriate ways to do this, eg. mark-up using a blockquote, inline quote, citation.
- Keep track of all your sources/references and cite them as footnotes.

3. Quiz page (*quiz.html*)

This page consists of a form where the user can enter:

- their first name
- their last name
- student number
- their responses to at least 5 questions *related to your topic*.

The questions should be use five different input types:

- a text input question
- a multiple choice question with one correct answer (radio button group)
- a multiple choice question with multiple correct answers (check box group)
- a drop list with a single correct answer.
- an input type of your choice other than the above (e.g. number, range, text area, image map, etc.)

Fieldsets and legends should be used appropriately to group inputs into questions.

Labels and inputs should be linked with a **for** attribute.

Before quiz answers are submitted, **HTML5 data validation** should be used to check the following:

- Text and radio input questions must be answered
- Name and student id fields are not empty.
- The first and last name data should be checked to ensure it only consists of alpha characters, hyphens or spaces. A maximum of 30 characters should be able to be entered.
- The student number is either 7 or 10 digits.

Data Submission of Quiz answer to the Server

For this assignment all forms should have a Submit input. When the submit button is clicked the name-values from the associated form should be sent to the server using the **post** http **method**. The server **action** address is <https://mercury.swin.edu.au/it000000/formtest.php>. The server will then just echo back the name value pairs to the client. While nothing will be stored on the server in this part of the assignment (we will do this in Part 2) this will allow the form to be tested.

4. CSS Presentation

No style markup should be included in your HTML file.

The pages in your website must be styled with CSS and have a consistent ‘look and feel’, particularly common elements such as menus, headers and footers. While the emphasis in this assignment is on the appropriate application of techniques rather than graphic design, your pages should follow basic usability / accessibility principles, e.g. distinguishable foreground and background colours, and font readability, etc.

You are to create your own stylesheet to implement your design. For this assignment you should create a single **external** CSS stylesheet that styles the common elements on *all* your Web pages. This file should be named **style.css** in an appropriate folder

1. **CSS should be commented at the beginning of the CSS file to identify author and purpose, and individual line comments should be used as necessary to explain particular styles and explain where they are applied.**
2. **All** the following CSS Selectors should be used *appropriately* at some point in your assignment:
 - element, #id, .class, grouping, contextual
 - pseudo class or element
3. Provide appropriate formatting to your menu with a background colour.
4. The following specific CSS rules should be demonstrated on your **index.html** page:
 - display a background graphic.
 - the footer text should be in a **italic font** and **centred** in the footer.
5. The following specific CSS rules should be demonstrated on your **topic.html** page:
 - <h1> elements should have their font variant, size and family etc. set using the short-hand **font** property.
 - The table should have one background colour for the headings and another background for the data cells
 - The <aside> should be 30% of the width of page and float to the right.
 - The <aside> should have a coloured border with an appropriate margin and padding.
 - The footer should cover the full width of the page.
6. All pages should have a fluid layout (the page should “Reflow” on page resize).

Other CSS selectors and properties should also be used as necessary and appropriate for the presentation.

Hint: CSS validators will validate against a particular version of CSS e.g. CSS2.1 or 3. This assignment should be valid CSS3. Make sure that you are checking your CSS using the correct version of the validator. For example, if you include CSS3 markup and validate as CSS2.1 it will show errors. Do not include any proprietary CSS mark-up, such as –moz- or –webkit- etc.

Enhancements

Note: Make sure you get all the basics working first before you attempt any enhancements.

The technologies for developing Web applications are rapidly changing. One of the key skills you will need is finding out about these techniques (from the Web) and applying them. This assessment gives you an opportunity to demonstrate your ability to implement features/techniques that go beyond the specified requirements above. This is an opportunity to demonstrate your ability to discover techniques from a range of sources and apply them in a standards compliant manner.

These enhancements need to be implemented within the Web pages (index.html, topic.html, quiz.html). The extra features need to enhance your website in a relevant way.

On a separate Web page called *enhancements.html* **list** and **describe** each enhancement you have made and how you have significantly extended the basic HTML and CSS beyond what is covered in the Lectures/Tutorials. Hyperlink from this list to where the feature is implemented in your website. If it is a CSS feature, hyperlink to an example of the html that is selected by the CSS rule. For each enhancement feature briefly explain:

- ☒ how it goes beyond the basic requirements of the assignment
- ☒ what code is needed to implement the feature
- ☒ if you have sourced your technique from a third party the source of this technique (e.g. URL) *must be cited*.
- ☒ a hyperlink *to where you have applied that extension in your website* (this is needed so the marker can quickly assess your enhancements).
- ☒ All enhancements must be able to run on the version of Firefox in the labs. Make sure you check this.

A *maximum of 2 enhancements* will be assessed. Here are some **examples** of HTML/CSS enhancements:

- *Effective, appropriate and innovative* use of a **number** of distinct HTML elements not covered in lectures/tutorials (e.g. Image maps) used in a way that improves the user experience of the website.
- A **number** of additional CSS properties or selectors (e.g. support for interactivity) not covered in the lectures/tutorials. For example the use of a range CSS3 pseudo-elements and classes, child or siblings combinators, attribute selectors, etc. (e.g. use the CSS3 :target selector to help us see where you have applied your enhancements.)
- Implement Responsive Design with additional CSS that presents your website specifically for mobile phone / tablet sized displays.
- **In addition** to your standard CSS, create another CSS files that *re-implements* and *extends* the style with a library/preprocessor such a Bootstrap, LESS or Sass. Demonstrate and document a number of cool features that can be implemented using the library.

Discuss your proposed enhancements with your facilitator before you implement them. The number of marks you receive for an enhancement will be at the **sole** discretion of your marker. As a guide if the enhancement has only taken a couple of lines of code it is likely to be trivial.

- Be relevant to / enhance the content of the website
- Be well described (as explained above)
- Be non-trivial.
- Be significantly different from other features you have implemented.

Web Site Folder Structure and Deployment

The directory structure of your website is described below. You can create additional HTML files for your content (depending on what your content requires), but the following is needed:

<code>assign1/</code>	<i>You must have this folder – case sensitive!</i>
<code>index.html</code>	
<code>topic.html</code>	
<code>quiz.html</code>	
<code>enhancements.html</code>	
<code>...other html pages</code>	
<code>images/</code>	<i>Folder for images for your page content</i>
<code>styles/</code>	<i>Folder for style.css and other css image files</i>
<code>style.css</code>	
<code>...other css files</code>	
<code>styles/images/</code>	<i>Folder for images referred to by your css files e.g. background</i>

Notes:

- HTML files should only be in the base “assign1/” folder – not anywhere else.
- **All** images used for the **content** should be stored in the “assign1/images/” folder.
- **All** images used for the style should be stored in the “assign1/styles/images/” folder.
- There should be a “style.css” file in the “assign1/styles/” folder.
- All links to your files (CSS or images) should be **relative**. **Do not use absolute links**, as these links will be broken when files are transferred for marking. No marks will be allocated if links are broken.

Note: DO NOT INCLUDE VIDEO OR OTHER LARGE (>1MB) MEDIA FILES IN YOUR SUBMISSION.

Project Report (Individual Task)

The project report is an individual task. Your report must be professionally written (**600-1200 words**). Table 1 presents the suggested structure for the report and some sample content for each section of the report.

Table 1. Components of Report and Requirements

Component	Content
Title	<ul style="list-style-type: none">• Report title• Your name• Student ID
Introduction	<ul style="list-style-type: none">• Website introduction• Objective of the report• Outline of the report's structure
Website Content	<ul style="list-style-type: none">• Introduce the purpose of each page and main content of each page• Some technical details on how you use HTML markups• A sitemap
Website Style	<ul style="list-style-type: none">• Introduce the presentation of your website• Some technical details on how you use CSS markups• Screenshots to show the design/user interface
Key Features	<ul style="list-style-type: none">• Highlight the key / innovative features of the website• Describe your enhancements (if you have them)
Conclusion	<ul style="list-style-type: none">• Summary of the report• Recommendations for future improvements
References	<ul style="list-style-type: none">• (Optional) List of reference materials if used
Appendix	<ul style="list-style-type: none">• (Optional) Information that supports but is not essential to the report

Short Video (Team Task)

Create a short video to introduce and demonstrate your web application.

- Upload your video to youtube
- [Create a hyper link in the index.html page of your website, link it to your youtube video](#)
- Every team member must present in the demonstration video for a similar amount of time
- The total length of the video should be between 4 to 5 minutes.

Deliverables

The marks are allocated 50% for team task and 50% for individual task in this assignment.

- The web application (team task)
- The short video (team task)
- Project report (individual task)

Assignment Submission (Canvas + Mercury)

Your website should be uploaded to Mercury on or before your deadline.

An electronic copy of your assignment should be submitted through Canvas on or before your deadline.

- Make sure all your website files are in the correct folders and compress your root folder with all your sub-folders with HTML, CSS, and images into a zip file named "assign1.zip". Submit this to Canvas. When the zip file is decompressed, the entire website should be able to be run from index.html without needing to move any files.
- You don't need to submit the demonstration Youtube video. You only need to include a hyperlink in the index.html page pointing to your Youtube video.
- Every student needs to submit their individual project report to Canvas.
- Every student needs to submit their peer evaluation form to Canvas.
- You can submit more than once through Canvas. Your last submission will be marked.
- Note that all deliverables must be submitted electronically.

Website Requirements Checklist

Index page HTML Menu that links (consistent menu on all pages) <input type="checkbox"/> Header with appropriate context including title <input type="checkbox"/> Footer with email hyperlink to your student email <input type="checkbox"/> CSS: Background graphic <input type="checkbox"/> Menu appropriately formatted with background colour <input type="checkbox"/> Footer text italic and centred <input type="checkbox"/>	
Topic page HTML Headings (at least 2 hierarchically contiguous levels) <input type="checkbox"/> Ordered list <input type="checkbox"/> , Definition list <input type="checkbox"/> , No. of Sections >=2 <input type="checkbox"/> , Aside <input type="checkbox"/> , Table <input type="checkbox"/> , Figure and Caption <input type="checkbox"/> , Graphic < 100KB <input type="checkbox"/> CSS: Table different background colour for headings and data <input type="checkbox"/> Aside 30% viewport width <input type="checkbox"/> , floats right <input type="checkbox"/> , coloured border <input type="checkbox"/> <h1> shorthand font property, size family set <input type="checkbox"/> Footer full page width <input type="checkbox"/>	
Quiz page Text input for names, id and text box question <input type="checkbox"/> Radio <input type="checkbox"/> Checkbox <input type="checkbox"/> Dropdown <input type="checkbox"/> 5 th input type question <input type="checkbox"/> Labels linked with <i>for</i> <input type="checkbox"/> Fieldsets used <input type="checkbox"/> HTML5 data validation: Text radio input questions answered <input type="checkbox"/> Names alpha/space/hyphen > 0, =< 30 <input type="checkbox"/> ID digit 7 or 10 only <input type="checkbox"/> Data for all inputs returned from server correctly <input type="checkbox"/>	
CSS (general) Selectors: element <input type="checkbox"/> , #id <input type="checkbox"/> , .class <input type="checkbox"/> , grouping <input type="checkbox"/> , context <input type="checkbox"/> , pseudo <input type="checkbox"/> Fluid page flow (relative dimensions) <input type="checkbox"/>	

Good Practice / In-house Standard

(It will cause deductions if these good practice / in-house standards are not followed)

Requirement	
- Well designed structure	
- Appropriate contrast in colours	
- Appropriate use of fonts	
- Consistent application of style across pages	
- Topic content has sufficient quantity (150 words +)	
- Topic content is sufficient quality	
- Meta-data follows in-house standard	
- HTML has no embedded Style markup, CSS is fully separated from HTML	
- HTML elements follow in-house standard (e.g. alt on images)	
- No deprecated elements/attributes used	
- No inappropriate use of HTML semantics (e.g. use of <div> when <section> <article> should be used)	
- No redundant CSS or unused selectors	
- Appropriate header comments (match in-house standard)	
- Appropriate use of selectors (e.g. Class versus ID)	
- Appropriate line comments	
Web site	
- All third party content acknowledged properly*	
- Directory Structure as defined	

* Note: Failure to acknowledge the source of third party code or content is plagiarism and may result in zero marks for this assessment or other penalties in accord with Swinburne policy.

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Website Marking Rubric

Index.html (5 marks)	5 marks	4 marks	3 marks	2 marks	0 - 1 mark
	The requirements are implemented with high quality and follow the in-house standard.	Most of the requirements are implemented and follow the in-house standard.	Some requirements are not implemented correctly or not follow the in-house standard.	Limited requirements are implemented.	No or very limited requirements are implemented.
Topic.html (10 marks)	9 - 10 marks	7 - 8 marks	5 - 6 marks	3 - 4 marks	0 - 2 marks
	The requirements are implemented with high quality and follow the in-house standard.	Most of the requirements are implemented and follow the in-house standard.	Some requirements are not implemented correctly or not follow the in-house standard.	Limited requirements are implemented.	No or very limited requirements are implemented.
Quiz.html (10 marks)	9 - 10 marks	7 - 8 marks	5 - 6 marks	3 - 4 marks	0 - 2 marks
	The requirements are implemented with high quality and follow the in-house standard.	Most of the requirements are implemented and follow the in-house standard.	Some requirements are not implemented correctly or not follow the in-house standard.	Limited requirements are implemented.	No or very limited requirements are implemented.
CSS (10 marks)	9 - 10 marks	7 - 8 marks	5 - 6 marks	3 - 4 marks	0 - 2 marks
	The CSS requirements are implemented with high quality and follow the in-house standard. Page presentation is creative and effective.	Most of the CSS requirements are implemented and follow the in-house standard. Page presentation is appropriate for content.	Some CSS requirements are not implemented correctly or not follow the in-house standard.	Limited CSS requirements are implemented.	No or very limited CSS requirements are implemented.
Enhancement (10 marks)	9 - 10 marks	7 - 8 marks	5 - 6 marks	3 - 4 marks	0 - 2 marks
	Excellent enhancement. It enhances the content / presentation / functionality of the website. It is technically advanced.	Very good enhancement. It enhances the content / presentation / functionality of the website.	Implemented some enhancements and/or they don't meet some of the requirements listed in the enhancement section.	Limited work and/or they don't meet some of the requirements listed in the enhancement section.	No or very limited work.
Video Demonstration (5 marks)	5 marks	4 marks	3 marks	2 marks	0 - 1 marks
	Excellent knowledge of the project is demonstrated. Presentation is highly creative and accomplished.	Very good knowledge of the project is demonstrated. Presentation is skilful and creative.	Adequate knowledge of the project is demonstrated. Presentation is clear and adequate.	Not enough information is presented. More practice is needed.	No or very limited information is presented. More practice is needed.

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Individual Report Marking Rubric

	9 - 10 marks	7 - 8 marks	5 - 6 marks	3 - 4 marks	0 - 2 marks
Overall Presentation of Report (10 marks)	Quality of report is truly professional, clear and easy to follow, has good structure, cohesive and well thought with the reader(s) in mind.	Quality of report is professional, clear and easy to follow and has good structure.	Quality of report is clear and has good structure.	Quality of report is somewhat clear, but still difficult to follow and/or it contains some spelling or grammatical errors.	Quality of report is unprofessional, difficult to follow and/or it contains numerous spelling or grammatical errors.
Website Content (10 marks)	9 - 10 marks Very detailed information allows reader to understand the content and information structure of this website.	7 - 8 marks Detailed information allows reader to understand the content and information structure of this website.	5 - 6 marks Adequate information allows reader to understand the content and information structure of this website.	3 - 4 marks Limited or insufficient information on the content and information structure of this website.	0 - 2 marks Minimal information does NOT allow reader to understand the website.
Website Style (10 marks)	9 - 10 marks Very detailed information allows reader to understand the style and user interface of the website.	7 - 8 marks Detailed information allows reader to understand the style and user interface of this website.	5 - 6 marks Adequate information allows reader to understand the style and user interface of this website.	3 - 4 marks Limited or insufficient information on the style and user interface of this website.	0 - 2 marks Minimal information does NOT allow reader to understand the style and user interface of this website.
Website Features (10 marks)	9 - 10 marks Excellent summary about the website key features.	7 - 8 marks Good summary about the website key features.	5 - 6 marks Adequate information about the website key features.	3 - 4 marks Limited or insufficient information about the website key features.	0 - 2 marks No or very limited information does NOT allow reader to understand the website key features.
Introduction & Conclusion (10 marks)	9 - 10 marks Convincing, critical, well-articulated and rigorous discussions for the required deliverables.	7 - 8 marks Sound discussions for the required deliverables.	5 - 6 marks Satisfactory discussions for the required deliverables.	3 - 4 marks Limited or insufficient discussions for the required deliverables.	0 - 2 marks No or very limited discussions for the required deliverables.