



Swinburne University of Technology  
Faculty of Science, Engineering and Technology

## COS60004 Creating Web Applications

Assignment Part 1, Semester 1, 2020

### Develop a simple static website

#### Important Dates:

Due Date	Week 5, Monday by 10am (Late submission penalty 10% of total available marks per day)
Demonstration	Your tutorial: Week 5

**Contribution to Final Assessment: 12%**

This is an Individual Assignment. **All work must be your own.** Submissions are *automatically checked* for similarities. Unexplained 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 of the assignment

This individual 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 part of the assignment** – we will use JS in Part 2.

The **essential requirements** for this assignment are listed in the marking guide. In general the web pages must:

- have relevant content
- must include the HTML markup specified in the marking guide
- must validate to HTML5 without errors
- must be styled by a validated CSS3 file
- must be linked to each other via a menu
- must be deployed on Mercury.

### Scenario:

An IT company wants to develop a website that will enable it to advertise vacant positions. These have a 'position description' that sets out the qualifications, skills and knowledge required. Potential applicants for the position will be able to submit an online form to apply for a position.

In this assignment you will develop a prototype of this website. The website you develop will consist of the following Web pages, accessible from a common menu on each page:

- Home page with details of the company ([index.html](#))
- A page of job descriptions ([jobs.html](#))
- A job application page ([apply.html](#))
- A page with your personal details ([about.html](#))
- A page which lists any enhancements you have made ([enhancements.html](#))

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

You will also include

- A CSS file that styles your website ([style.css](#)).

## Content and presentation of Web Pages

### HTML Elements

The website must be developed using HTML5 to describe the content and logical structure.

Web pages should **not contain any deprecated elements/attributes**.

The following HTML elements must be used in this assignment

- General
  - Comment, Head, Title, Meta, Body  
*As appropriate to each page*
- Structure
  - Header, Navigation, Footer, Section, Aside *Used in most pages*
- Content
  - Heading levels, Paragraph
  - Ordered list, Unordered list, Definition list, Table, Image and Anchors
  - Other elements as detailed in the page requirements shown below
  - A Form, with labelled and grouped form control elements which validate user input

Where "in-house" **templates** have been defined in this unit (e.g. for meta-data; tables; etc.) these should be followed.

All Web pages should have a consistent layout and navigation.

The HTML in your Web pages **must validate** against the W3C HTML5 validator

<http://validator.w3.org/nu> .

Accessibility guidelines should be followed, especially for media, tables and forms.

Elements such as block quotes, strong, emphasis, among others can be used, if deemed necessary and appropriate for the content.

Generic structural elements like `div` or `span` should only be used where there is not a more appropriate or meaningful HTML5 element (e.g. `section` or `strong`).

Pages should **not contain any deprecated elements/attributes** (e.g. `<i>` , `<b>`).

Do not use `iframe` elements in your assignment.

## 1. Home page (*index.html*)

This page should contain appropriate title, a description and graphic related to the company. It is up to you to make up the details of the company that is advertising the jobs. It should contain a menu that links to the other pages on your Web site. This same menu should be in every page of your website with an email link to your student email.

## 2. Position Descriptions page (*jobs.html*)

You need to write a web page with at least 2 position descriptions. *For one of these your tutor will allocate you a job title from the IT industry.* For the second position, the choice of IT job type is entirely up to you. Why not write a position for the ideal job you would like to do? Be as imaginative as you like.

The HTML on this page must contain:

- Hierarchically structured headings of at least 2 levels
- More than one <section>
- An <aside> with appropriate content
- At least one ordered list
- At least one unordered list
- The page should also have an appropriate footer.

Your job descriptions should be concise but as a minimum include :

- Company's position description reference number (5 alphanumeric characters)
- Position title
- Brief description of the position
- Salary range
- The title of the position to whom the successful applicant will report
- Key responsibilities. A list of the specific tasks that are to be performed
- Required qualifications, skills, knowledge and attributes. These should be divided into "essential" and "preferable". These requirements should include such things as programming languages required, number-of-years of experience required, etc..

The content of the job description should be appropriately structured with headings, sections, subsections, lists etc. using the appropriate HTML elements.

### Sources / References:

- You can use material from other websites but the source of all material must be acknowledged. This acknowledgement should be immediately after the material *and* include a **hyperlinked URL** to the original source. The text of the hyperlink reference can be a short name but the hyperlink must work.
- If you are unsure of what is contained in a position description there are many resources on the web.

### 3. Job application page (*apply.html*)

This page has a form that allows a potential candidate to register their interest in the advertised position. HTML5 data validation should be used to check the user's input.

The form will allow a potential applicant to fill in the following:

Field	Format requirement
Job reference number	exactly 5 alphanumeric characters
First name	max 20 alpha characters
Last name	max 20 alpha characters
Date of birth	dd/mm/yyyy
Gender	radio inputs grouped using a fieldset and legend
Street Address	max 40 characters
Suburb/town	max 40 characters
State	drop down selection from VIC,NSW,QLD,NT,WA,SA,TAS,ACT
Postcode	exactly 4 digits
Email address	validate format
Phone number	8 to 12 digits, or spaces
Skill list - the last item in list should read "Other skills..."	checkbox inputs
Other skills	textarea

All inputs should have labels. All form values, except the comment textarea are 'required' or have a default value (e.g. select and checkbox inputs). **The user should not be able to submit the form if any of these required fields are blank.**

#### Data Submission to Server

The form should have a submit button labelled "Apply". When this 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 3) this will allow the form submission to be tested.

### 4. A page about you (*about.html*)

This page will contain information on the following:

Information	HTML element to be used
Your name	Definition list
Student number	Definition list
Your tutor's name	Definition list
Course you are doing	Definition list
Photo of you < 100k	HTML figure element
Your Swinburne timetable	HTML table
A <b>mailto</b> link to your student email.	

It could also include personal profile, such as resume, interests, or information that is related to you. This extra information gives you an opportunity to extend the techniques you apply in your assignment, and could include:

- Demographic information about you
- Description of hometown
- A list of your favourite books, music, films etc.

## CSS Requirements

**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.

Create your own design and implement it using one **single external** stylesheet that applies to *all* your Web pages. This file should be named **style.css** and placed in a styles folder on the server. The stylesheet should style the common elements on *all* your web pages, and address the following specific style requirements.

1. **Comments:** The CSS should include comments at the beginning of the CSS file to identify author and purpose. Individual line comments should be used as necessary to explain particular styles and explain where they are applied.
2. **Selectors:** **All** the following CSS Selectors should be used *appropriately* at some point in this assignment:
  - element, #id, .class, grouping, contextual
  - pseudo class, pseudo element
3. **Menu:** The menu should have its own set of styles applied. Use a background colour.
4. **Index Page:** Demonstrated the following specific CSS rules on the **index.html** page:
  - display a background graphic.
5. **Position Descriptions Page:** Demonstrated the following specific CSS rules on the **jobs.html** page:
  - <h1> elements should have their font variant, size and family etc. set using the short-hand **font** property.
  - The <aside> should be 25% 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 the footer text should be in a small font and centred in the footer..
6. **About Page:** Demonstrated the following specific CSS rules on the **about.html** page:
  - Style the definition list so that each <dt> is on the left and the <dd> on the right in a single line. Set the dt to have a common width.
  - The photo should be styled with a single border using the short-hand **border**-property, and the figure should be floated to the right of the definition list
  - <table> should be centred within the section, headings in bold, table cells with a background colour specified in hexadecimal format
  - The email should be style similarly to the definition list.
7. **All pages:** should have a fluid layout (the page should "Reflow" on page resize).

Other CSS selectors and properties can be used as necessary and appropriate for the presentation

**Do not include any proprietary CSS mark-up, such as *-moz-* or *-webkit* etc.**

**Hint:** CSS validators will validate against a particular version of CSS e.g. CSS2.1 or 3. This assignment should be valid CSS2.1 or 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.

## Enhancements to the Specified Requirements

**Note: Make sure you get all the basics working first before you attempt any enhancements. See the marking Guide below.**

*The technologies for developing Web applications are rapidly changing. One of the key skills you will need is finding out about these new techniques and applying them. This assessment gives you an opportunity to demonstrate your ability to implement features/techniques that go beyond the specified requirements above. It also provides you with 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 required web pages (index.html, jobs.html, apply.html, about.html). The extra feature needs to **enhance** your web site in a meaningful and relevant way.

**List and describe** each enhancement implemented on the separate **enhancements.html** page, and describe how you have significantly extended the basic HTML and CSS beyond the lecture and tutorials. Hyperlink from this list to where the feature is implemented in your Web site.

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
- the references to any third party sources for the technique, (e.g. URL) **must be cited**.
- a hyperlink to where you have applied that extension in your Web site** (this is needed so the tutor can quickly assess your enhancements during the demonstration).

**A maximum of 2 enhancements will be assessed (up to 10 marks each). Examples of HTML/CSS enhancements you might make that will contribute a high distinction mark include:**

- *Effective, appropriate and innovative* use of a **number** of distinct HTML elements not covered in tutorials (e.g. Image maps, Canvas, etc) 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, animation) not covered in the 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.

*Discuss your proposed enhancements with you tutor before you implement them.*

The number of marks you receive for an enhancement will be at the **sole** discretion of your tutor/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.

**Note: Do not include JavaScript in this part of the assignment. This will be covered in Part 2.**

## Web Site Folder Structure and Deployment Requirements

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>jobs.html</code>	
<code>apply.html</code>	
<code>about.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 files</i>
<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 (>5MB) MEDIA FILES IN YOUR SUBMISSION.**

**Make sure you thoroughly test your website deployment on the mercury server.**

## Assignment Submission

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

- Make sure all your 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 can submit more than once through Canvas.
- Note that all deliverables must be submitted electronically. There is no need to submit an assignment cover sheet.

**Make sure you complete your Canvas submission process.**

**Declaration:**  
 I hereby confirm that the assignment to be demonstrated is identical to that submitted to Canvas

Student number ..... Student name .....

Signature ..... Date .....

Tutorial Day ..... Tutorial Time ..... Tutor Name .....

.....  .....

Essential Requirements	Tick box <input checked="" type="checkbox"/> if requirement met	Y/N
<b>index.html</b> – validated HTML5 <input type="checkbox"/> <head> with all meta tags, title, author <input type="checkbox"/> – nav menu that links <input type="checkbox"/> logo/graphic <input type="checkbox"/>		
<b>jobs.html</b> – validated HTML5 <input type="checkbox"/> nav menu <input type="checkbox"/> appropriate levels of headings <input type="checkbox"/> – meaningful content <input type="checkbox"/> >~150 words <input type="checkbox"/> image <input type="checkbox"/> list <input type="checkbox"/> <footer> <input type="checkbox"/>		
<b>apply.html</b> – validated HTML5 <input type="checkbox"/> nav menu <input type="checkbox"/> form (at least different four form controls) <input type="checkbox"/> specified data echoed back from server <input type="checkbox"/> some HTML5 data checking <input type="checkbox"/>		
<b>about.html</b> – validated HTML5 <input type="checkbox"/> nav menu <input type="checkbox"/> – dl list <input type="checkbox"/> timetable <input type="checkbox"/> photo <input type="checkbox"/> email link <input type="checkbox"/>		
<b>style.css</b> – validated external CSS <input type="checkbox"/> single file CSS applied to all HTML pages <input type="checkbox"/> – consistent typological style applied to all pages <input type="checkbox"/> some CSS layout applied <input type="checkbox"/> Selectors used: element <input type="checkbox"/> ,#id <input type="checkbox"/> ,.class <input type="checkbox"/>		
Deployed to Mercury <input type="checkbox"/>		
<b>Subtotal (all Y)</b>		

Specified Requirements	Place <input checked="" type="checkbox"/> or <input checked="" type="checkbox"/> in box - 2 marks each tick	Comment	Mark
<b>index.html</b> HTML ( <i>deduct 2 marks up to -10 for each HTML5 validation error</i> ) Menu that links (consistent menu on all pages) <input type="checkbox"/> Header with appropriate context including title <input type="checkbox"/> Footer <input type="checkbox"/> CSS: Background graphic <input type="checkbox"/> Menu appropriately formatted with background colour <input type="checkbox"/>			/10
<b>jobs.html</b> HTML ( <i>deduct 2 marks up to -20 for each HTML5 validation error</i> ) Headings (at least contiguous 2 levels) <input type="checkbox"/> Ordered list <input type="checkbox"/> , Unordered list <input type="checkbox"/> , 2+ Sections <input type="checkbox"/> , Aside <input type="checkbox"/> CSS: Aside 25% width <input type="checkbox"/> , floats right <input type="checkbox"/> , coloured border <input type="checkbox"/> <h1> font variant, size family set <input type="checkbox"/> Footer full page width <input type="checkbox"/>			/20
<b>apply.html</b> ( <i>deduct 2 marks up to -26 for each HTML5 validation error</i> ) <i>One mark only if input has no html check</i> Text input with HTML format checking for: job ref no (=5 char) <input type="checkbox"/> , names (<20 char) <input type="checkbox"/> , address (<40 char) <input type="checkbox"/> , postcode (=4 digits) <input type="checkbox"/> , email <input type="checkbox"/> , phone number (8 to 12 digits) <input type="checkbox"/> Appropriate input for date <input type="checkbox"/> Radio buttons for gender with fieldset <input type="checkbox"/> Dropdown box for state <input type="checkbox"/> Skills check boxes <input type="checkbox"/> Text area <input type="checkbox"/> Labels linked with 'for' (test by 'clicking' on label) <input type="checkbox"/> Data for all inputs returned from server correctly <input type="checkbox"/>			/26
<b>about.html</b> ( <i>deduct 2 marks up to -16 for each HTML5 validation error</i> ) definitions lists <input type="checkbox"/> lists single line common width <input type="checkbox"/> photo in figure <input type="checkbox"/> border as specified <input type="checkbox"/> float right <input type="checkbox"/> timetable <input type="checkbox"/> timetable format as specified <input type="checkbox"/> email link works <input type="checkbox"/>			/16



<b>CSS (general)</b> ( <i>deduct 1 mark up to -8 for each CSS3 validation error</i> )		
Appropriate use of selectors: grouping <input type="checkbox"/> , context <input type="checkbox"/> , pseudo <input type="checkbox"/>		/8
Fluid page flow (relative dimensions) <input type="checkbox"/>		
<b>Subtotal</b>		<b>/80</b>

**Enhancements to Specified Requirements** *listed and linked* from enhancements.html  
Maximum of 2 Enhancements will be assessed (put your best ones at the top of the list). Up to 10 marks are available per feature. Poorly implemented or trivial enhancements may receive less or zero marks.

Feature Name	Described	Linked to where implemented on your Web site	Source (if applicable)	Mark
	Y/N	Y/N	Y/N/na	/10
	Y/N	Y/N	Y/N/na	/10
<b>Total Additions</b>				<b>/20</b>

**Other Deductions** based on demonstration, documentation, code and file inspection

Requirement	Max Deduction if not met	Deduct
<b>Page design</b>		
- Poorly designed structure	-4	
- Appropriate contrast in colours	-2	
- Appropriate use of fonts	-2	
- Consistent application of style across pages	-2	
- Appropriate application of styles (e.g. different styles for menu)	-2	
<b>Content</b>		
- Job descriptions have sufficient quantity	-4	
- Job descriptions is sufficient quality	-4	
- About.html content meets spec	-4	
- Images (including portrait) present and appropriate file size	-4	
<b>HTML</b>		
- Meta-data follows in-house standard	-3	
- HTML has no embedded Style markup CSS is fully separated from HTML	-4	
- No deprecated elements/attributes used	-3	
- No inappropriate use of HTML semantics (e.g. use of <div> when <section> <article> should be used)	-4	
- HTML does not follow usability standards (e.g. alt on images)	-3	
- Comments adequate	-3	
<b>CSS</b>		
- No redundant CSS or unused selectors	-3	
- Appropriate header comments (match in-house standard)	-3	
- Appropriate use of selectors (e.g. Class versus ID)	-3	
- Appropriate line comments	-3	
<b>Web site</b>		
- All third party content acknowledged properly*	4	
- Directory Structure as defined above	-4	
<b>Total Deductions</b>		

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

**A final assignment mark will not be provided during the demonstration. All code is inspected after the demonstration by your tutor before a final mark is allocated.**

Comments: .....