School of Software and Electrical Engineering

COS30045 Data Visualisation

Exercise 1.1 Technology Fundamentals HTML and CSS Review

ILO	Create web-based interactive visualisations using real-world data sets.
Requirements:	Demonstrate basic familiarity with HTML and CSS coding Set up a client-server environment on Mercury Upload webpage to server and view through web client Create a webpage with the following features: - HTML code demonstrating the use of > 5 different tags - Use CSS to style html elements on webpage

Resources:	*Textbook:*
	    Chapter 3 Murray (2017) Interactive Data Visualisation (2nd Ed) on ProQuest
	    Murray (2017) Interactive Data Visualisation (2nd Ed) on Safari
	Web Resources:
	    W3Schools
	    Modzilla Developer Network: HTML
	    Modzilla Developer Network:CSS
	    codeacademy
	    W3Schools HTML Quiz
	    W3Schools CSS Quiz
	    Modzilla Developer Network: What are browser developer tools or
	    Chrome DevTools
	Videos:

Demonstration:	Demonstrate appropriate and well formatted use of HTML and CSS Be prepared to demonstrate Code live to tutor when requested: - code is appropriate for task, well formatted and commented - code runs correctly and meets the requirements specified in this Task - explain programming features and concepts in the code - successfully edit code to change a specified feature of the program

Overview

In this unit you will learn to use D3 to create web-based visualisations. D3 is a JavaScripting library that is used in conjunction with HTML and CSS. Therefore, before starting with D3 you will need to review the basics of HTML and CSS coding. Do do this you will build a simple webpage about pet owner ship in the pandemic showing basic HTML and CSS functionality.

> **Tip**: If you have done COS10011 Creating Web Applications, it might be worth going back and reviewing your notes. We expect that the good practices you learnt in CWA are continued in this unit.

Your website needs to demonstrate the following:

Requirement Set 1: HTML basic header information

- ☑ include language and charset
- ☑ informative meta data
- ☑ an informative title for your web page

Requirement Set 2: Use basic HTML tags

- ☑ heading levels
- ☑ paragraphs
- ☑ ordered list ?.
- ☑ footer
- ☑ bolding and italics

Requirement Set 3: Add links and images

- ☑ display an image with appropriate alt text
- ☑ link to another web page

Requirement Set 4: Use CSS

- ☑ use CSS to add style to Header 1 and 2 (e.g., change colour, font, size, weight, margins…)
- ☑ italicise figure caption
- ☑ prevent figure caption from extending past image
- ☑ add CSS styling to Footer

Note: This Task Guide is not meant to be fully explanatory. If you haven't done any web programming before you will need to do extensive self study to catch up with the basics. W3Schools has excellent tutorials and examples that will help you get through these basic exercises. There is also a chapter on basic HTML and CSS in the text book Interactive Data Visualisation for the Web by Murray.

Step 1: Start a basic HTML template

In this unit we will be using the programming text-editor Atom to write our code. Feel free to use other text-editors of your choice. Set up a basic HTML template. (see Canvas/Assignment/ LAB 1.1 HTML and CSS for resource: *HTML Starter Template.html*)

```html
1   <!DOCTYPE html>
2   <html lang="en">
3
4   <head>
5     <meta charset="UTF-8"/>
6     <meta name="description"  content="Data Visualisation Exercise 1"/>
7     <meta name="keywords"     content="HTML, CSS"/>
8     <meta name="author"       content="Your name here"/>
9
10    <title>Task 1.1 HTML and CSS Demo Page</title>
11
12  </head>
13
14    <body>
15
16      <!-- Code goes here!  -->
17
18    </body>
19
20  </html>
```

Note: This example makes use of place holder text known as "Lorem ipsum". You can use your own or take a look at the data we going to display and write your own description of it for your web page.

Step 2 Demonstrate your knowledge of basic HTML tags

Take a look at the following screen shot.

Build a similar web page of your own about pet ownership during the COVID Pandemic (see *Canvas/Assignment/LAB 1.1 HTML and CSS/COS30045 1.1 Resources.zip/pets and the pandemic.txt*)

Step 3 Add an image and html link

Pet ownership during the COVID pandemic has increased. Add an **image** of the Pet Ownership in Australia data table (see *Canvas/Assignments/LAB 1.1 HTML and CSS/COS30045 1.1 Resources.zip/pet_ownership_in_australia_table.png*).   Make sure you link to the original source of the table (i.e., https://animalmedicinesaustralia.org.au/wp-content/uploads/2021/08/AMAU005-PATP-Report21_v1.41_WEB.pdf). You might also like to add some images of Australia's favourite pets (see *Canvas/Assignments/LAB 1.1 HTML and CSS/COS30045 1.1 Resources.zip/* for resource: dog.jpeg, cat.jpeg, fish.jpeg).

Title of Interesting Article

Author of Interesting Article

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| Pet ownership in Australia, 2019 vs 2021 | | | | | | | | |
| Pet type | Household penetration (%) | | Total owner households ('000) | | Animals per household (average) | | Total pets ('000) | |
	2019	2021	2019	2021	2019	2021	2019	2021
Dogs	40	47 ▲	3,848.2	4,644.6	1.3	1.4	5,104.7	6,344.3
Cats	27	30	2,602.4	3,030.7	1.4	1.6	3,766.6	4,903.3
Fish	11	13 ▲	1,056.8	1,314.5	10.7	8.5	11,331.7	11,186.5
Birds	9	14 ▲	867.9	1,384.0	6.4	3.9	5,569.4	5,448.4
Small mammals	3	5	257.8	498.9	2.4	3.0	614.5	1,502.0
Reptiles	2	4	194.5	426.4	1.9	1.6	364.2	663.4
Other pets	2	1	194.8	118.6	9.2	3.4	1,785.3	401.2
Pet Owners	61	69 ▲	5.9 m	6.8 m			28.5 m	30.4 m
Non-Owners	39	31 ▼	3.7 m	3.1 m				

Fig 1. Comparison of Pet Ownership in 2019 and 2021. Data Source: [Animal Medicines Australia Report](#)

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Tip: The figure in this webpage is tagged with <figure>, and the caption with <figcaption> This gives you a little more control over these elements later.

Step 4 Add Cascading Style Sheet (CSS) styles

At the moment the webpage is displayed using default styles. Make it look a bit better by using CSS. Your styling does not need to be the same as the example, but try to make it look elegant!

Title of Interesting Article

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Before you finish up on this task make sure you can:

- run and view your webpage through your chosen IDE (i.e., Atom, Visual Studio Code etc)

- view the inspector