

# SIT 120 Portfolio

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# Chapter 1

## Justification For Grade

I will be aiming for a **High Distinction** grade within this assignment, and also more generally throughout the course. I have done a few MOOC courses relating to web development, and have used similar frameworks to VUE, such as React and Angular. Since I am familiar with these topics, I will use this course to fill in the gaps of knowledge, and focus on the more advanced topics within the course, as well as the more formal proposal process.

I will continue to update this justification as the course progresses.

# Chapter 2

## Week 1

### 2.1 Weekly Content

#### 2.1.1 HTML

##### Introduction to HTML

Hyper Text Markup Language is a structured way to store the information which will be displayed on a webpage. More simply, HTML tells the browser **WHAT** to display.

HTML uses tags (example: `<body></body>`), with most "opening tags" having a matching "closing tag" with the relevant information between the two. Attributes can be set within the opening tag, to assign classes, ids, etc. to the tag. This looks like: `<p class="text">`

##### Boilerplate To Get Started

There is a small amount of code that is present in most HTML webpages to get started:

---

```
<!DOCTYPE html>
<html>
  <head>
    <title>Title</title>
    <script src="INSERT_LINK_TO_JAVASCRIPT_FILE_HERE"></
      script>
    <link rel="stylesheet" type="text/css" href="INSERT_LINK_
      TO_CSS_FILE_HERE">
  </head>
  <body>
    INSERT HTML TO DISPLAY HERE.
  </body>
</html>
```

---

**Notice the indentation!** To make this code easier to read, any tag that is inside another tag will be indented further. For example, it is easy to see that the head tag is inside the html tag.

<!DOCTYPE>	This is to let the browser know that this is a current HTML5 document. Previous versions of html will have different codes to insert here. (WHATWG 2021)
<html>...</html>	This is the html document, all information will be inside this tag
<head>...</head>	This contains information that will not be displayed within the webpage itself.
<title>...</title>	The title to the webpage. This will be displayed either in the browser's title bar area at the top of the window, or the tab area.
<script>...</script>	This can either contain JavaScript code directly, or have a src attribute that links to an external file (either locally, or from a http link)
<link>	This links to some exterior document. The most common use of the link tag is to link to an external css file, but other documents that might be linked are icons, and licenses. (W3 Schools n.d.[c])
<body>	Body contains all the information that will be displayed on the website itself.

### Other useful tags and descriptions

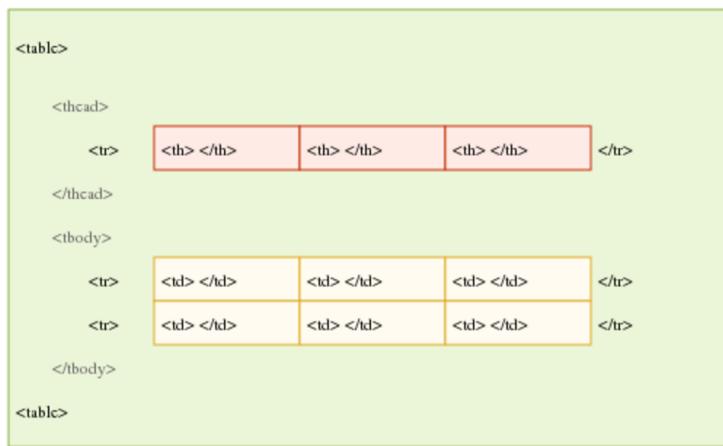
- <p>...</p> contains a paragraph of text.
- <h#>...</h#> contains a header. # is replaced by the size of header, 1 is the largest and 6 is the smallest.
- <div>...</div> is a generic tag that creates a container for other elements.
- <a href="...">...</a> creates a hyperlink to another page. href is the link, and the text between the tags is displayed to the user.

### Tags without closing tags

-  loads an image from either a website, or local storage.

### Tables

This graphic provides a clear understanding of the structure of a table. The information is placed in the inner most tags (th and td).



(HTML/Tabellen/Aufbau einer Tabelle n.d.)

## Forms

Forms are a collection of input fields within HTML. The user can enter different types of information depending on the type of input field. When the form is submitted, the browser will collect all the inputs and either send them to a url (if the attribute **action** is present), or will send them to a javascript function (if the attribute **onsubmit** is present). An example of a form with the inputs name, age and location might be:

---

```
<form onsubmit="submitForm(event)">
    <label for="name">Name</label>
    <input type="text" id="name" size=20 maxlength=20>
    <label for="age">Age</label>
    <input type="number" id="age" max=120>
    <label for="location">Location</label>
    <input type="text" id="location">
    <input class="button" type="submit" value="Submit">
    <input class="button" type="reset" value="Cancel">
</form>
```

---

Which would output:

Name	<input style="width: 100%; height: 20px;" type="text"/>
Age	<input style="width: 100%; height: 20px;" type="text"/>
Location	<input style="width: 100%; height: 20px;" type="text"/>
<input style="margin-right: 10px;" type="button" value="Cancel"/> <input style="background-color: #007bff; color: white; border-radius: 10px; padding: 5px 10px;" type="button" value="Submit"/>	

## Inputs

In HTML5, inputs can have a variety of types (To name a few: text, number, email). Some inputs limit what can be inputted into the field, such as an input with the type email will only accept properly formatted emails. Another reason to use proper input types is to create a responsive website, where a different keyboard will appear on a mobile device depending on the input type.

**Your comment:**

I am a comment

**Your email:**

k

Please enter an email address.

Send now

(Mozilla n.d.[e])

Input fields can also be displayed as buttons, for example if the input type is submit or reset as seen in 2.1.1.

For accessibility reasons, each input must be accompanied by a label tag, which uses the **for** attribute to connect to an input's id.

## 2.1.2 CSS

### Introduction to CSS

Cascading Style Sheets tells the browser **HOW** to display the information in the HTML file.

#### Basic Syntax

CSS uses property name and value pairs separated by a colon, and different pairs are separated by a semi-colon. An example of this would be:

```
color: blue;
```

where color is the property name and blue is the property value.

Which elements these styles are applied to is specified outside of curly braces. Some common options are "**tag**" if the style is applied to every element of a particular tag, ".**class**" for elements with the class of "class", and "#**id**" for specific elements noted with the id of "id". (Notice the lack of punctuation before the tag, the "." before the class, and the # before the id.)

An example would be:

---

```
.specific-class {  
    margin: 10px,  
    border: 1px solid black,  
}
```

---

Where every element with the class "specific-class" would have a margin of 10 pixels and a border that is 1 pixel thick, solid and black.

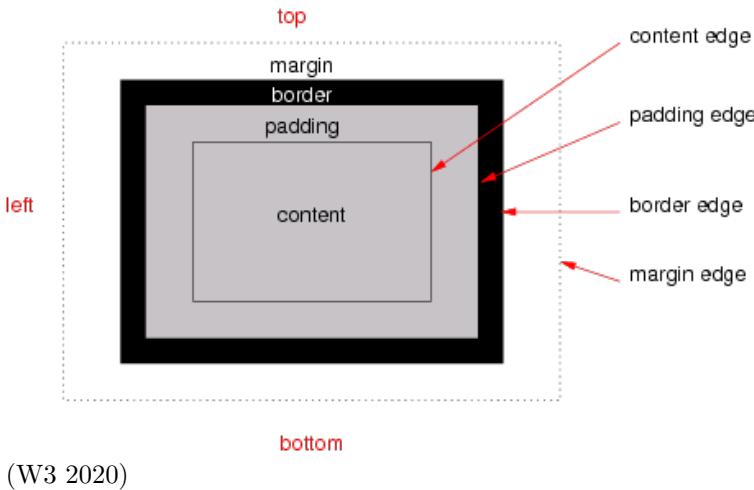
### Location of CSS

There are three options for where to place CSS code:

1. **Inline** Placed within the html code within the element. Example: <p style="color: red;">
2. **Internal** Placed within the style tag, usually within the head tag. Example: <style>p { color: red;}</style>
3. **External** Placed within an external .css file. This is then linked via the link tag as seen in 2.1.1.

This also effects how certain elements will override others. For example, any inline style will override any internal or external style, and any internal style will override any external style. The code is also read top to bottom, so styles at the bottom will override styles at the top.

### CSS Box



Every element on a webpage is contained in the box above. The outer most layer, margin, is the space outside the border. This will change the perception of how far away the box is from other boxes. After the margins and border, is the padding, this is the space between the border and the content.

### 2.1.3 JavaScript

#### Introduction to Javascript

JavaScript is a scripting language that is commonly used in web browsers (but has expanded to be able to do much more with the help of other programs such as NodeJS).

#### Declaring Variables

There are two options when declaring variables depending on if it is mutable or not. If the variable cannot be modified after initialization, use the keyword **const** followed by the variable name. For example **const number = 2**. If the variable is mutable, then use the keyword **let**. An example for this would be **let letter = 'L'**, where letter can be modified at a later time.

#### Declaring and Calling Functions

To declare a function, first use the **function** keyword, followed by the name, and a list of parameters within parenthesis. The internal code of the function is then placed within curly braces. To return a value to the calling function, simply use the keyword **return**. Example:

---

```
function addTwoNumbers(num1, num2) {
    return num1 + num2;
}
```

---

Then to call this function, use **addTwoNumbers(230, 384)**.

#### Window and Document Objects

Two useful objects within JavaScript is the window and document objects.

The window object references the entire browser window. This allows access to properties such as the location, history, height, width, etc. This would be equivalent to <html>.

The document object is a child of the window object. This contains everything that is displayed on the website. There are document methods that allow you to get an element by its id ( `getElementById()` ), as well as by its class ( `getElementsByClassName()` ), and many more. This would be equivalent to <body>

### 2.1.4 Vue.js

#### Introduction to Vue

Vue.js is a framework that allows the creation of user interfaces. It works with HTML/CSS/JavaScript to provide re-usable components, templates, state handling, and much more. (VueJS n.d.[b])

#### Templates

Within Vue, templates can be created. These allow for a reduction in code since there is much HTML that is common between web pages. Then when these templates are rendered, different data can be inserted.

Syntactically, Vue uses double curly braces to represent areas where data will be inserted later.  `{{ name }}`  will be replaced with the value of the name variable.  
(VueJS n.d.[c])

For a simple example of where templating can reduce the amount of code written, refer back to 2.1.1. Each html document you create has to have these pieces of code. Instead if you create a template as follows:

---

```
<html>
  <head>
    <title>Title</title>
    <script src="{{ jsFile }}"></script>
    <link rel="stylesheet" type="text/css" href="cssFile">
  </head>
  <body>
    <h1>{{ title }}</h1>
    <p> {{ paragraph }}</p>
  </body>
</html>
```

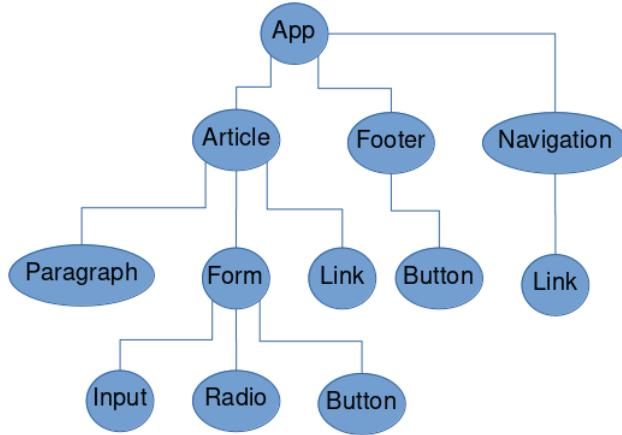
---

This could then be reused for many different websites with different information by supplying different values for the variables title, paragraph, jsFile, etc.. This of course can be expanded to much more complicated websites where there are many of the same pages. Consider Facebook, where everyone has their own profile page. These pages are standardised across the website to look the same, but the information is different on each one. A template is made once, then whenever the page is rendered it is filled with the appropriate data.

This then becomes even more powerful when responsive web apps are considered. Templates can be created for each style of device (small mobile, tablet, desktop). Then when the user visits the web app, the appropriate template can be used, all while the data remains the same.

## Components

Components are re-usable snippets of code that abstract away some code. Pre-defined options(or "props") can also be passed to the components to affect what is rendered. Many components can then be built together to form much larger apps, using minimal code compared to pure HTML/CSS/JS. For Example:



In this small example, the link component and the button component are reused within two separate parts. This is incredibly small compared to many web apps, which would reuse the components many, many times. This reduces repetition of code. (VueJS n.d.[a])

## 2.2 Practical Tasks

### 2.2.1 1 - HTML

This provided a very basic example to help learn the bare bones of HTML, and its commonly used tags. It also allowed practice in creating both a table and form.

#### Code

The code can be viewed on [github](#).

**Screenshot**


**Where are you?**

Name	Age	Location
John	20	New York
Sarah	25	London
Alice	40	Hong Kong

Name

Age

Location

[Cancel](#) [Submit](#)

**2.2.2 2 - CSS**

This task focussed on introducing CSS, which makes the website look attractive. It allows practice with the structure of CSS, as well as with properties that are commonly used.

Building upon the last task, I formatted the website using CSS. This allowed me to create a website that has two columns. One which contains the table of entries, the other that contains the form to input new entries. The image at the top of the page is then modified to look slimmer and stretch the width of the window, while the title is centred below.

**Code**

See code on [Github](#).

**Screenshot**

See 2.2.1 since these tasks are combined into one website.

**Useful Code**

There are many ways to centre an element in CSS, this (4.2.2) is a pretty simple and useful one which can either centre an element horizontally, vertically or both.

**2.2.3 3 - JavaScript**

I made a small JavaScript function that takes the inputs within the form, and dynamically updates the table. I also created a separate website to calculate the inputted student scores. This helped practice modifying the DOM dynamically with JavaScript, which allows for a seamless experience as the user,

since information or elements can be modified without refreshing the page.

### Code

See code for [the input form](#) and for [student grades](#).

### Useful Code

Being able to round numbers in JavaScript was useful in this project, since otherwise there could be tens of decimal places. To accomplish this I used variable.toFixed() [4.3.1]

### Screenshot

Before form submission:

## Where are you?

Name	Age	Location
John	20	New York
Sarah	25	London

Name	<input type="text" value="Alice"/>
Age	<input type="text" value="40"/>
Location	<input type="text" value="Hong Kong"/>

After form submission:

Name	Age	Location
John	20	New York
Sarah	25	London
Alice	40	Hong Kong

Name	<input type="text"/>
Age	<input type="text"/>
Location	<input type="text"/>

Before score calculation:

Score 1	Score 2	Score 3	Total Score	Average Score
80	40	85		
17	63	22		
85	90	76		

After score calculation:

Score 1	Score 2	Score 3	Total Score	Average Score
80	40	85	205	68.33
17	63	22	102	34.00
85	90	76	251	83.67

### 2.2.4 4 - Vue.js

A small Todo app with three default items of a classic grocery list. New tasks can be added through the input text box. Tasks can be clicked to complete them.

This task introduced the concept of components. The component <todo-item> was reused multiple times, showing the utility of components. From this it shows if they are this beneficial in smaller applications, they must be exponentially so in large applications, making them incredibly important.

### Code

See the code on [Github](#).

### Useful Code

I found Window.onload() [4.3.1] to be useful in ensuring the entire page is loaded before Vue tries to reference an element.

### Screenshot

## To Do:

The screenshot shows a simple To-Do list application. At the top, there is a list of tasks with checkboxes next to them:

- Vegetables
- Cheese
- Milk

Below the list is a horizontal input field for searching tasks. To the right of the input field is a button labeled "Add task".

## 2.3 Project

### 2.3.1 What I completed this week

This week I have read through the **Assignment 1: Guidelines and Rubrics**. I have understood what is required of the assignment, and started to make notes of ideas/requirements that will help me to complete this assignment.

### 2.3.2 What I will complete next week

Next week I will do research and think of an idea for my project. I expect this to take a fair bit of time to find a good idea that can be original, as well as managed within the time limitations of the course. This should take me approx. 4 hours.

# **Chapter 3**

## **Week 2**

### **3.1 Weekly Content**

#### **3.1.1 Responsive Design**

Responsive design is all about modifying how your website looks based on the device. This is mandatory now with the sheer number of users which primarily browse websites on their mobile device.

##### **Meta Viewport**

The most important part of responsive design is also the easiest. Using the `<meta name="viewport">` tag in the head tag of the HTML file tells the browser to make the width of the page dependent on the width of the device, rather than the number of pixels on the screen. This is due to the high density of pixels on today's smartphones. (Lepage and Andrew 2020)

Adding the `initial-scale=1` attribute to the meta tag will help with smartphones in landscape view.(ibid.)

##### **Avoid Horizontal Scrolling**

For a better user experience, only scroll vertically. This is what modern users are accustomed to, and scrolling horizontally or zooming to see a page properly will cause frustrations. (ibid.)

##### **Use Percentages for Size**

For elements, it is preferred to assign size by percentage of parent element. This means that as the screen grows, so too does the element in proportion. Details such as margins, padding and font, should continue to use constant values.

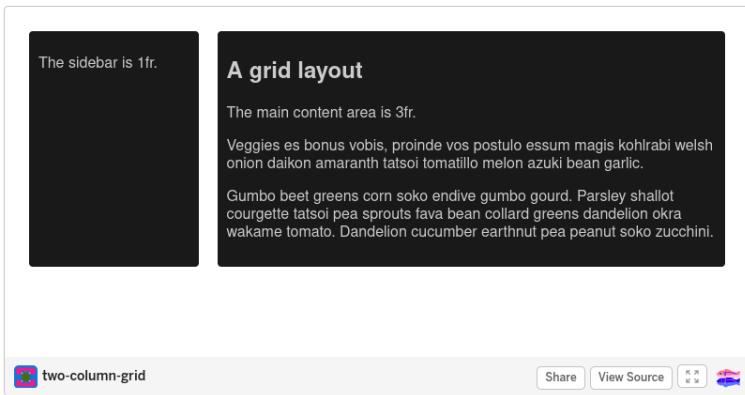
##### **Flexbox**

Flexbox allows multiple elements within a row to be spread out various ways. Flexbox can evenly spread out these elements, or change the size of the elements proportionally to the row. When adding more elements, flexboxes will wrap around automatically. This creates a responsive design, while being

very easy to develop by the developer.

## Grid

CSS grid splits a container into grids. This allows for a container to be divided into the specified ratios. One part of this container is known as 1fr. For example, if there was a container that had two children, one was 1fr, and the other was 3fr, the one child would take up 25% of the space, and the other would take up 75% of the space. See the example below:



## Media Queries

Media queries allow CSS to be specified depending on the screen size. This means that the same HTML and JavaScript can be used, while there are two completely different styles. Alternatively the two versions could share many styles, and only differ with a few dimensions.

This allows the creation of "**breakpoints**" or points where the change in screen size, changes the layout of the page. Major breakpoints occur when there are significant layout changes, such as shifting from horizontal placement, to vertical. Minor breakpoints are where there is a shift in a smaller detail of the screen such as padding, or font-size. The syntax is as follows:

---

```
@media (max-width: 600px) {
    /* This CSS will be active for screens less than 600px wide*/
}

@media (min-width: 600px) {
    /* This CSS will be active for screens greater than 600px wide*/
}
```

---

(Lepage and Andrew 2020)

### 3.1.2 User Stories

User Stories are a way of describing software requirements. It takes it a step further by placing the developer in the shoes of the user. This allows the developer to see understand what is important to the user, how it will effect them and the urgency of the potential change.

User stories can be written in the following formula: As a **user**, I want **a feature** so **motivation**. Although this isn't a strict rule, and is more of a guideline for introducing the topic. The important

part is that the sentence covers the *who*, *what*, and *why*. This skips over how to implement details. These can get very specific by creating possible personas for the users

User stories can also be broken up into three categories:

### 1. Epic Stories

Large stories.

General goals for the software.

Usually the starting point.

Can be broken down into a few user stories.

### 2. User Stories

### 3. Sub Stories

Small stories, usually about smaller implementations that help with user stories.

## 3.1.3 HTML Media

HTML Media tags are a way to add dynamic media into a website, instead of only static text and images. There are a few with varying uses:

<pre>&lt;video&gt; &lt;source    src    =    "movie.mp4" type="video/mp4"&gt; &lt;/video&gt;</pre>	Loads a local video, which can be either mp4 or ogg. Possible attributes on the video tag are controls, width, height, autoplay and muted, which are all fairly self-explanatory (W3 Schools n.d.[d])
<pre>&lt;audio&gt; &lt;source    src    =    "movie.mp3" type="video/mp3"&gt; &lt;/audio&gt;</pre>	Much the same as video, except the tag is audio instead of video. Uses mp3 instead of mp4, and does not have the height or width attributes. (W3 Schools n.d.[e])
<pre>&lt;canvas&gt;</pre>	Creates a canvas on the screen which can then be drawn upon. This can be used to render graphics in real-time.

## 3.1.4 HTML API

### Drag and Drop

An API that allows the developer to specify if an element is "draggable", and the actions that occur when that element is dropped. Most frequently the dropped element will be added as a child of the element it is dropped on. (W3 Schools n.d.[a])

### Geolocation

Accessible through JavaScript's navigator.geolocation which shares the user's current location. (W3 Schools n.d.[b])

## 3.2 Practical Tasks

### 3.2.1 Task 1

#### Reflection

Since I am just starting out in the industry, and web development, it is handy to investigate how other sites are built. I then can observe what works well from a user perspective, and what falls short. Taking this I am able to learn from it and adapt it into my own style.

#### Introduction

Please see 3.3.1 for further information about my proposal idea.

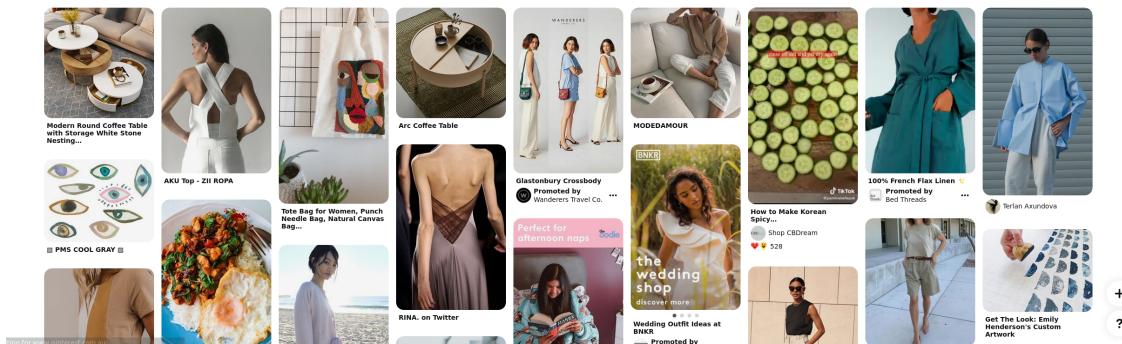
Two websites I found to be similar were **Pinterest** and **garden.org**. Pinterest because they are an image driven website, and garden.org for the horticulture relation.

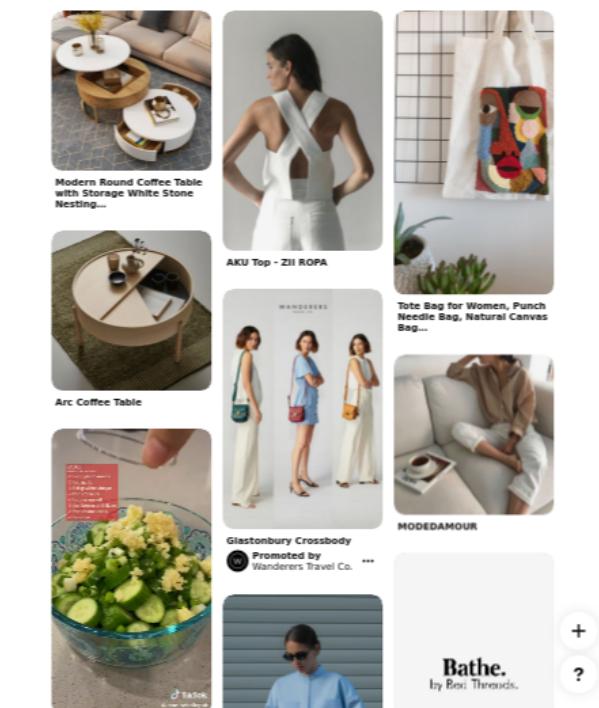
#### Pinterest

Pinterest as a large tech company has a good responsive design. I imagine their priority would be on their app rather than their website.

Pinterest include the meta viewport tag in their header.

They use a number of columns to display images. Wider the screen, the more columns there are on the screen. They keep these columns at a fixed width of 252 px, and change the margins of the page accordingly. The large container is styled using media tags, changing the width as necessary. Each element is loaded individually with Javascript, and transformed/translated into place. The distances are calculated by knowing the previous images sizes as well as margins.

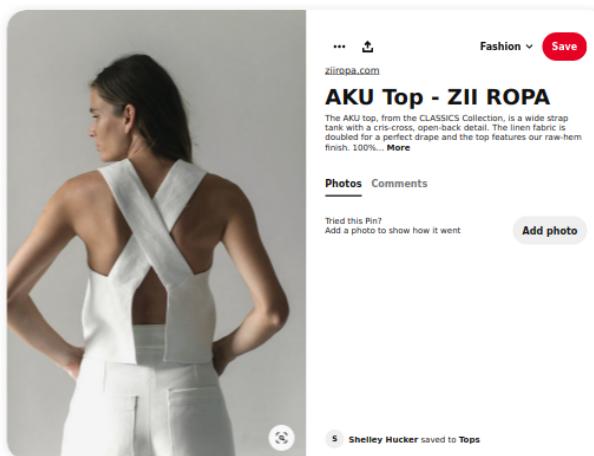


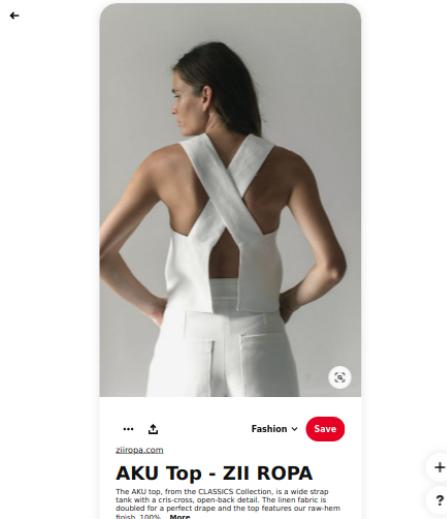


The navigation bar is also responsive. The main change is the search bar growing with the size of the screen to fill the navigation bar. Some features (such as advanced search) will disappear on lower widths when there isn't enough room. Finally on very small screens, the search bar becomes a button that users press to open up the search bar below.



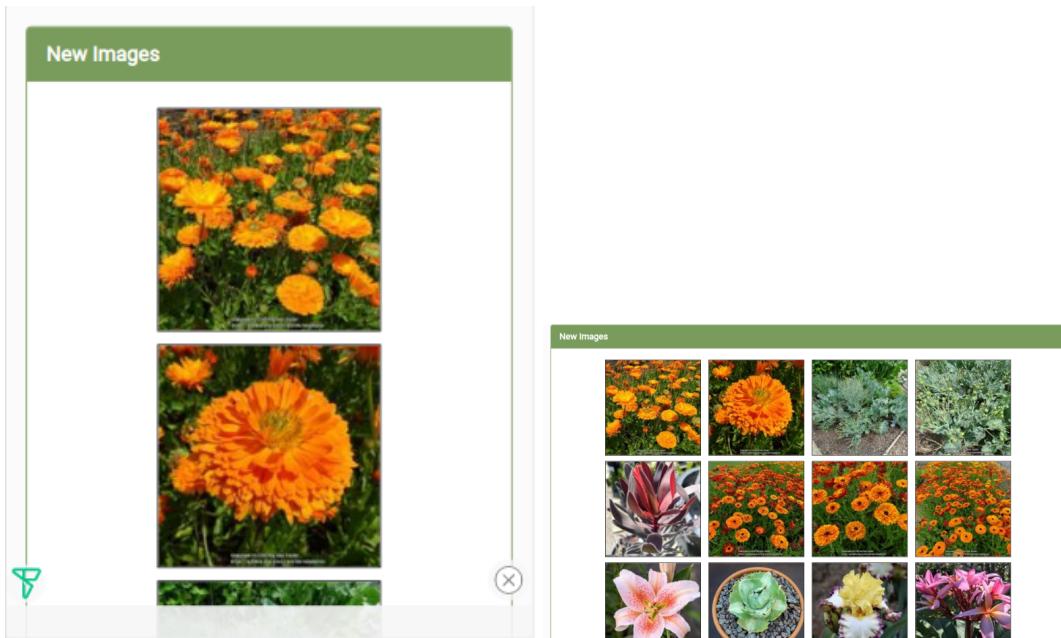
On individual profile pages, the layout changes depending on the size of the screen. For smaller screens, the image/video is what you initially see, then scroll for the text/information. On larger screens, the image/video is on the left, while the information is on the right.





### garden.org

garden.org is also quite responsive. For larger screens ( $> 1000\text{px}$ ), there are two columns on the home screen, one for images the other for comments. For smaller screens, there is only one column, with comments being below images. These two columns grow and shrink depending on the size of the screen. The images within these columns are in columns, and the number of columns changes based on the screen width.



The screenshot shows a forum post interface. On the left, under 'New Images', there are four thumbnail images of orange flowers. On the right, under 'New Comments', there are three comments from different users:

- Gardener2493** on Jul 22, 2021 6:08 PM, concerning plant: Honey Mesquite (*Prosopis glandulosa*). The comment describes the tree as growing to 20-50 ft, with thorns on wild forms but not on cultivated ones. It notes long clusters of mimosa-like, sweet-smelling flowers ranging from white to light yellow, and white pods used as flour substitutes.
- Australis** on Jul 21, 2021 10:56 PM, concerning plant: Day's Cymbidium (*Cymbidium dayanum* 'Kingston Red'). The comment states that the selection is variable depending on growing conditions, with red markings on the petals.
- farmerdill** on Jul 21, 2021 2:00 PM, concerning plant: Watermelon (*Citrullus lanatus* 'Jade Star'). The comment describes it as a hybrid (diploid) icebox melon, Sugar Baby type, about 10 days earlier than Sugar Baby, and twice the size.

This screenshot shows a forum post with a larger grid of images. On the left, under 'New Images', there is a 3x3 grid of various plants and flowers. On the right, under 'New Comments', there are three comments:

- Gardener2493** on Jul 22, 2021 6:08 PM, concerning plant: Honey Mesquite (*Prosopis glandulosa*). The comment is identical to the one in the previous screenshot.
- Australis** on Jul 21, 2021 10:56 PM, concerning plant: Day's Cymbidium (*Cymbidium dayanum* 'Kingston Red'). The comment is identical to the one in the previous screenshot.
- farmerdill** on Jul 21, 2021 2:00 PM, concerning plant: Watermelon (*Citrullus lanatus* 'Jade Star'). The comment is identical to the one in the previous screenshot.

When clicking on an image, a pop up window appears containing a larger version of the image. This grows as the screen grows, when it reaches a certain point (800px), it won't grow any more, but will stay centred in the screen.

The screenshot shows a 'Recent Plant Image' modal. It displays a large image of a Pot Marigold flower. To the left of the main image is a sidebar with a navigation bar and a list of plant names. Below the main image are detailed information and a caption.

Recent Plant Image
Pot Marigold ( <i>Calendula officinalis</i> 'Greenheart Orange')
kniphofia -
<a href="#">» More Photo Details &lt;</a>
Caption: "Plant trial"

### 3.2.2 Task 2

#### Reflection

Using CSS is the most efficient way, and lightweight way to make a website responsive. Using the media tags, it is easy to create multiple versions of a design that adapts automatically.

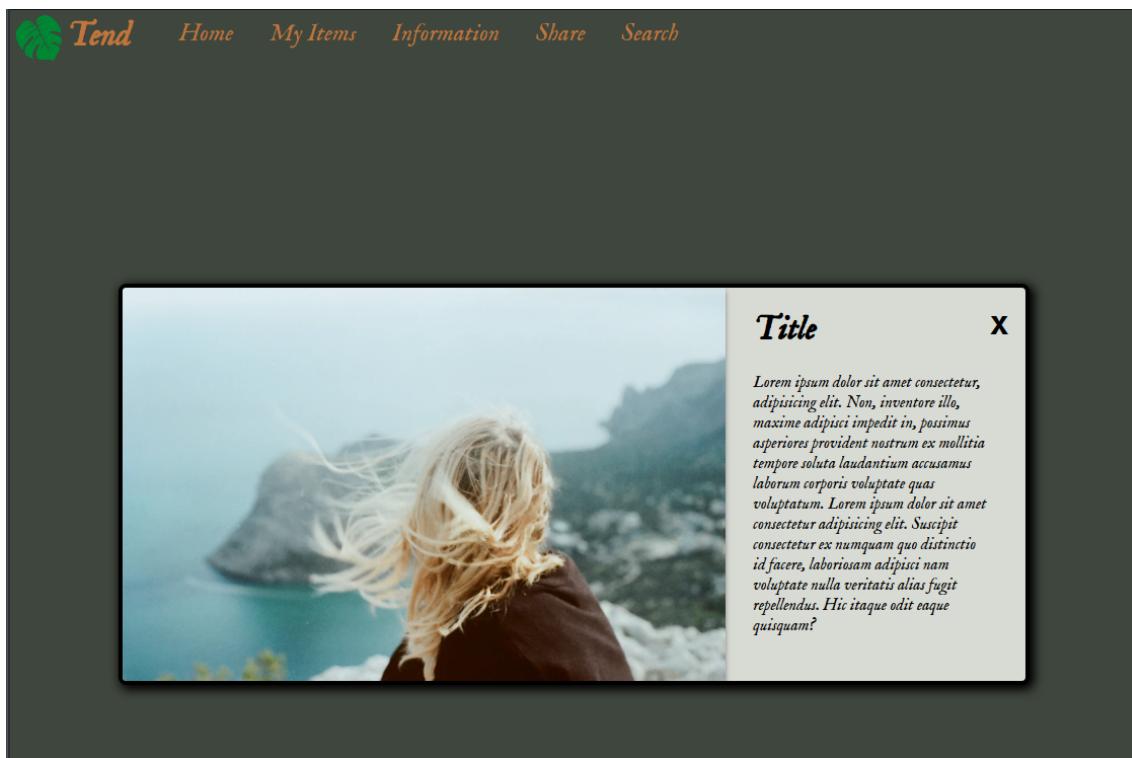
#### Screenshot

For Task 2, I decided to mock up the single plant page for my proposal. The information and photos just need to be added in later. I have created a simple layout of navigation bar at the top, as well as a

main content pop-up in the middle of the screen. This will be overlayed on the screen as it's opened. On a desktop (>1000px), the image will be on the left, and the text will be on the right. On a smaller device, the image will be prominent when the pop-up is opened, and the text will be below for the user to scroll through.

There is another major breakpoint at 700px. Larger screens will have text in the navigation bar. Smaller screens will only have a search icon and a menu icon (which opens up a drop down menu with further options).





### Source Code

For the source code go to [github](#).

### Useful Code

I decided to use a custom font on this website. I downloaded it locally, then used 4.2.4 to add it to the website.

I also discovered another way to center an element with 4.2.3

### 3.2.3 Task 3

#### Reflection

User stories are a very useful tool in the planning parts of software development. Putting yourself in the user's shoes to determine what is important to them, and what features need to be implemented help create understanding, as well as the ability to prioritise what is important for these users.

Pre-designing UI within an application such as Figma saves a lot of time in the overall process. It is much easier to change a UI position, colour, etc. in such a program, rather than rewrite the CSS in the actual web page each time. I found this out after creating the first UI in Task 2, then subsequently using Figma in Task 3.

## User Stories

Epic Stories	Acceptance Criteria [Referenced User Story]	Priority
<b>Epic #1:</b> As a person with many plants, I would like to be able to keep track of the schedules for these plants so they can be healthy.	<ol style="list-style-type: none"> <li>1. Create a plant profile. [1]</li> <li>2. Have the website generate a schedule based on the plant chosen, and be able to tweak that if necessary. [2]</li> <li>3. Notifications based on required scheduled events. [3]</li> </ol>	High
<b>Epic #2:</b> As a person who is new to horticulture, I would like to get new information about plants so that I am informed about how to care for them	<ol style="list-style-type: none"> <li>1. Search for information on specific plants. [4]</li> <li>2. Show new, useful tips. [5]</li> <li>3. Find general horticulture advice. [5]</li> </ol>	Medium
<b>Epic #3:</b> As a social person, I would like to be able to share my plants, and interact with others, so that I am able to share experiences and ideas.	<ol style="list-style-type: none"> <li>1. Discussion forum based on plant species. [6]</li> <li>2. Share photos of plants. [7,8]</li> <li>3. Interact with other users directly. [6]</li> </ol>	Low

User Stories	Acceptance Criteria [Reference Sub Story]	Priority
<b>User Story #1:</b> As a user, I would be able to create a plant profile so that I can store information about my plants.	<ol style="list-style-type: none"> <li>1. Input information about plants. [1, 2]</li> <li>2. Upload image of plant. [1,2]</li> <li>3. Select species of plant. [1,2]</li> </ol>	High
<b>User Story #2:</b> As a user, I would like auto-generation of a schedule for my plants that I can adjust, so that I am able to see when I need to water/fertilize/re-pot my plants.	<ol style="list-style-type: none"> <li>1. Auto-generate schedule based on species and climate. [2]</li> <li>2. Modify frequency of actions manually. [2]</li> <li>3. Regeneration of schedule if action occurs (Example: user waters plant). [3]</li> </ol>	High
<b>User Story #3:</b> As a user, I would like notifications about necessary actions so that I don't forget to water a specific plant.	<ol style="list-style-type: none"> <li>1. Show notifications clearly.[3]</li> <li>2. Simple actions by clicking notifications. [3]</li> </ol>	High
<b>User Story #4:</b> As a user, I would like to be able to search for information on specific plants so that I am able to anticipate the level of care for a future plant, or properly care for a current plant.	<ol style="list-style-type: none"> <li>1. Search For species of plant. [4]</li> <li>2. Get ideal schedule for specified plant. [5]</li> <li>3. Get trouble shooting guide for specific plant. [5]</li> </ol>	Medium
<b>User Story #5:</b> As a user, I would like to be shown new horticulture tips, so that I am able to learn about new topics and concepts.	<ol style="list-style-type: none"> <li>1. Randomly display a tip of the day. [6]</li> <li>2. A "How-To" guide for basic horticulture principles and techniques. [7]</li> </ol>	Medium
<b>User Story #6:</b> As a social user, I would like to discuss and exchange horticulture related ideas so I can expand my knowledge on more advanced topics, or ask more experience users for help.	<ol style="list-style-type: none"> <li>1. Post to a discussion forum. [8]</li> <li>2. Message users directly. [9]</li> </ol>	Low

User Stories	Acceptance Criteria	Priority
<p><b>User Story #7:</b> As a social user, I would like to share photos of plants I have grown so that I can proudly show off all my hard work</p> <p><b>User Story #8:</b> As a plant enthusiast, I would like to browse photos of other plants so that I can gain inspiration and enjoyment.</p>	<ul style="list-style-type: none"> <li>1. Add a photo to a plant profile. [2, 10]</li>   <li>1. Browse other plant profiles. [11]</li> </ul>	<span style="color: blue;">Low</span>  <span style="color: blue;">Low</span>
Sub Stories	Acceptance Criteria	Priority
<p><b>Sub Story #1:</b> As a user I would like to login or create an account so that I can store information for later.</p> <p><b>Sub Story #2:</b> As a user I would like to input information about my plants so that I can reference it later.</p> <p><b>Sub Story #3:</b> As a user I would like to interact with my plants so I can record times I have watered, fertilized, etc..</p>	<ul style="list-style-type: none"> <li>1. Text input for username, password and a box to remember me.</li> <li>2. Button to register a new user. Able to input username, email, password After registration, user is asked to login with new credentials</li> <li>3. Successful login returns user to a personal home screen</li>   <li>1. Text input for title, notes.</li> <li>2. Select species of plants using an autocomplete box.</li> <li>3. Upload image.</li> <li>4. Suggested water timings, fertilization and re-potting values which can be modified.</li>   <li>1. Quick buttons for watering, fertilizing, re-potting.</li> <li>2. Generic action button for recording notes.</li> <li>3. Confirmation window to confirm actions in case of mistaken click.</li> </ul>	<span style="color: red;">High</span>  <span style="color: red;">High</span>  <span style="color: red;">High</span>

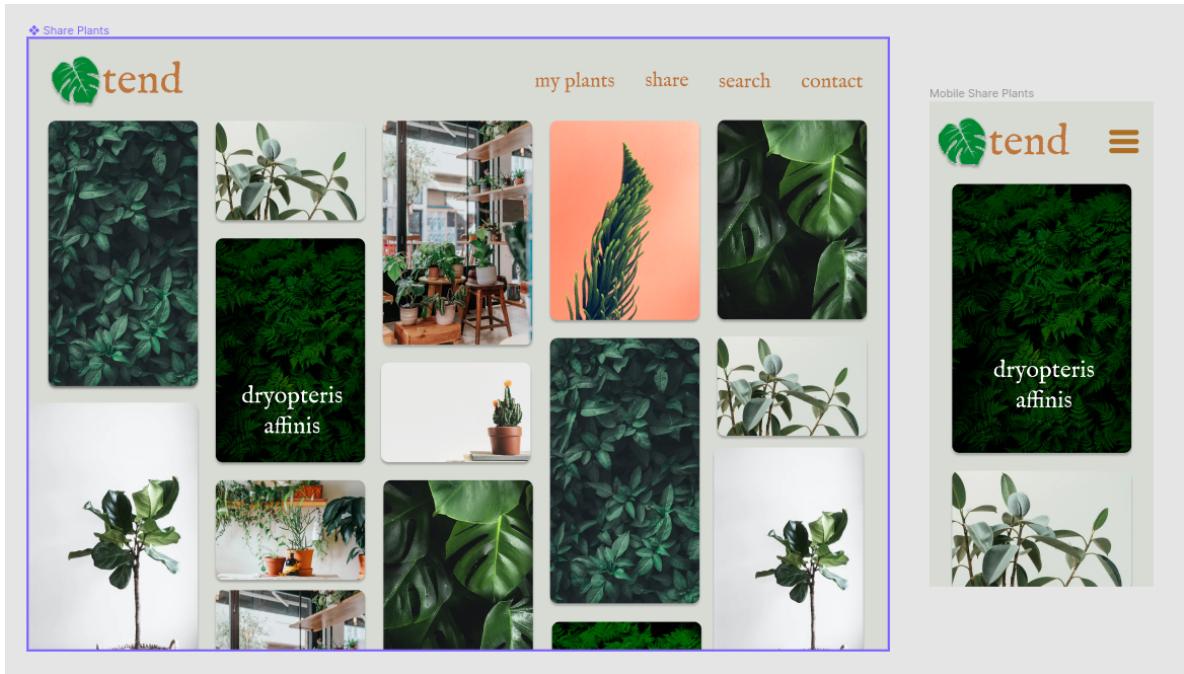
Sub Stories	Acceptance Criteria	Priority
<b>Sub Story #4:</b> As a user I would like to search for species of plants, so I can easily find what I am looking for.	<ul style="list-style-type: none"> <li>1. Text input with autocomplete for searching.</li> <li>2. List relevant search results based on selected filters.</li> </ul>	Medium
<b>Sub Story #5:</b> As a user I would like to get information for specific species.	<ul style="list-style-type: none"> <li>1. Display generic information</li> <li>2. Display usual watering schedule, humidity, and other care tips</li> <li>3. Display troubleshooting guide for an unhealthy plant</li> </ul>	Medium
<b>Sub Story #6:</b> As a user I would like to get random tips of the day for plants that I am interested in.	<ul style="list-style-type: none"> <li>1. Tip is based on a list of plants/- topics which interest the user.</li> <li>2. Tip is displayed on the personal home screen.</li> </ul>	Medium
<b>Sub Story #7:</b> As a user I would like to learn the basics of horticulture to ensure I am doing things correctly.	<ul style="list-style-type: none"> <li>1. Written articles explaining certain topics.</li> <li>2. Browse all articles or search for specific</li> </ul>	Medium
<b>Sub Story #8:</b> As a user I would like to post to the discussion forum so I can discuss and share ideas with others.	<ul style="list-style-type: none"> <li>1. Browse previous posts based on topic</li> <li>2. Text box for writing the post.</li> <li>3. Click a button to submit the post</li> </ul>	Low
<b>Sub Story #9:</b> As a user I would like to message other users directly.	<ul style="list-style-type: none"> <li>1. Click on users profile to message.</li> <li>2. Text box for writing the message.</li> <li>3. Click a button to submit the message</li> </ul>	Low

Sub Stories	Acceptance Criteria	Priority
<b>Sub Story #10:</b> As a user I would like to create a public profile for my plant.	1. Add public profile message to plant.	Low
<b>Sub Story #11:</b> As a user I would like to browse other plant photos.	1. Look at many different plant photos in an efficient way. 2. Be able to find out more about plants that are interesting.	Low

## UI

I used Figma to design one of the pages for my application. I designed the "Share Plants" page from my proposed web app. I decided on a fairly neutral, and natural colour scheme. Going through, I was able to identify a font that was

The end result was:



Much of this design can be reused throughout the web app, such as the navigation bar at the top, logo, etc. I will continue to use Figma to design the remaining pages of my web app.

I was able to get mock images from [unsplash.com](https://unsplash.com), which will be populated by real user images on the live version. The logo is a modified svg image from [pixabay.com](https://pixabay.com).

### 3.2.4 Task 4

#### Reflection

This task was helpful to become familiar with some of the media tags. The canvas tag in particular, I felt as though I have barely scratched the surface of what it can do. HTML has come such a long way from simply displaying text and is incredible what it can currently do by itself.

#### Explanation of Task Work

For task 4, I decided to play around with the video and canvas tag.

For the video tag, I used the previous template I was working on for my proposal site, but instead of an image, it had a video. This will allow users to be able to upload videos as well as pictures. Plant users love a good time lapse!



I also used the canvas tool, as well as some JavaScript to animate a green wreath around an idle mouse. The design needs a little work, but is a neat concept. This is achieved by finding the mouse with a "onmousemove" attribute on the canvas. This allows the position to be stored, and the countdown started. After a certain number of seconds the wreath begins forming. This makes use of the quadraticCurveTo, as well as some basic trigonometry/linear equations.

**Screenshot****Source Code**

For task 4 source code, see [Github](#).

## 3.3 Project

### 3.3.1 This Week

This week, I have come up with the basic idea for my web application. I will create an online website to store and share information about house plants. Part of the site will be a place to store information about current plants including water schedule, notes, etc. Another part will allow people to share experiences and photos of their plants.

Also throughout this weeks tasks, I have created one of the pages necessary, as well as worked on the mock-ups and user stories.

### 3.3.2 Next Week

Next week I fill focus on finishing the proposal. This includes finishing the user stories, the proof of concept as well as the mock ups. I will then go over and review before submission. This should take approx. 8 hours.

# Chapter 4

## Useful Code Snippets

### 4.1 Introduction

Throughout this course, if there is a code snippet I have found useful, I have put it in this section for easy reference. They will also be referenced in the practical task in which they were discovered.

### 4.2 CSS

#### 4.2.1 Common Properties

color	Color of text.
background-color	Color of element background.
height	Height of element.
width	Width of element
font-size	Size of font (can be in pixels, rem (relative font size), or pre-set (small, medium, etc.))
font-family	Specify the font, or family of fonts. Multiple can be specified, with the earlier fonts taking priority.
position	How the element is positioned in the document. Some possible values: relative(Follows the standard flow), absolute(placed in a particular location in the document), fixed (placed in a particular location on the screen.)
left, right, top, bottom	How far from the left/right/top/bottom the element is.
text-align	How the text within a p or h# tag are aligned (left, center, right)
border	How the border of the element looks. Uses the value format of "size style color"

(Mozilla n.d.[a])

#### 4.2.2 Center an Element (From Week 1)

To horizontally center any element:

---

```
element {  
    position: relative;  
    left: 50%;  
    transform: translateX(-50%);
```

```
}
```

Any element can also be centred horizontally (by using top, and translateY) or both (using top, left and translate(X, Y)). This moves the element half way across the screen, and then moves the element back half of its width. The end effect being that it is centred on the screen. (W3 Docs n.d.)

### 4.2.3 Centring an Element with Flex

Elements can also be centred by modifying their parent with the following syntax:

---

```
parent-element {
    display: flex;
    justify-content: center;
    align-items: center;
}
```

---

This works especially well if there is only one child of the parent.

### 4.2.4 Adding a custom font

To add a custom font, they have to be either available locally, or from a website. The following syntax is used:

---

```
@font-face {
    font-family: "Name_of_Font",
    src: url("www.fonts.com/name-of-font.ttf") format("ttf");
}
```

---

(Mozilla n.d.[b])

## 4.3 JavaScript

### 4.3.1 Window.onLoad = function() ... (From Week 1)

Upon fully loading the window, the provided function will then be called. This ensures the elements referenced within the function will be able to be found within the DOM. This is particularly useful with Vue, since there needs to be a rendered element for Vue to be attached. (Mozilla n.d.[c])

### 4.3.2 Round to Specific Decimal Place (From Week 1)

To round to a specific number of decimal places, use the toFixed(places) method on a number variable. For example:

---

```
let number = 9.43667;
number = number.toFixed(2);
// number == 9.43;
```

---

(Mozilla n.d.[d])

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