**Module 4 Exercise Instructions**

## Exercise 1: Lab – Figma (Page 28)

No right or wrong specifically, follow the design procedure:

· Requirements

· Sketch

· Lo-Fi

· Hi-Fi

Make the figma link public and viewable and just create a file that has a link to it in your labs repository.

To submit this exercise: Create a file and name it figma (doesn’t need an extension), Paste the link inside and commit to your repository.

## Exercise 2: Lab – Template (Page 36)

Make sure you do all three parts!

1. Ensure the addCard function can have content passed to the card dynamically.
2. Modify the code to call addCard repeatedly, so the cards are automatically generated based on data from an array. This ensures that you can make as many cards as needed to display all the data in the array. Use the provided code on the right hand side as the data.   
   const data = [{name: ‘bob’, age: 23}, {name: ‘alice’, age: 39}]
3. Generate multiple templates and populate your web page dynamically, use the provided code on the slide of Van Gogh and his portfolio.

## Exercise 3: Lab – Calculator (Page 39)

Don’t worry about getting the perfect scientific calculator working – try and follow the design process and just follow the instructions on the slide. The base of the application is an app that takes 2 numbers that can do 4 operations (+, /, \*, -). Pressing the ‘equals’ button will display the result. Pressing the ‘reset’ button will clear the display.

*Try not to use the eval() function – you will see on the MDN there are big security issues therefore we don’t use it, and implementing eval isn’t going to yield you results in terms of your learning.*

If in your research and tackling this project you come across calculation libraries - don’t utilize this to do the leg work of your calculation for you. There are similar security issues and you don’t want to ‘cheat’ and let something do the logical parts of your application for you.

Ensure you do the following:

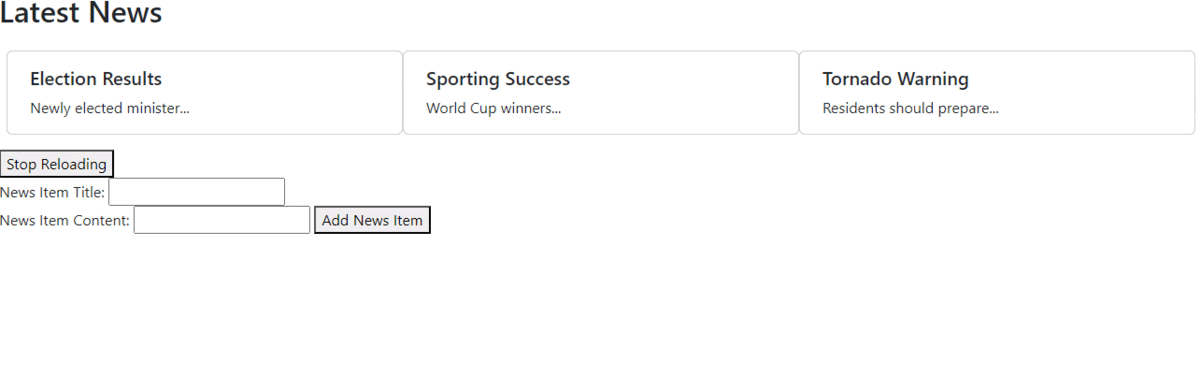
* Create a new repository
* Clone the repository locally
* Create a branch for each feature

## Exercise 4: Lab – Display Cards Bootstrap (Page 53)

Utilize bootstrap elements to make a responsive design

Optional Ext: Try and use what you’ve learnt on page 34 and use templates/javascript to populate your web page with your cards.

## Exercise 5: Lab – Manage Data 1 & 2 (Page 58 & 59)

****Example of how labs 1 & 2 come together -

Frames in order:

1. When you first open the page
2. When you add content (newsItem to your news array)
3. Interval function kicks in and displays new data

## Exercise 6: Lab – Fetch Data (Page 69)

Make use of the fetch API to retrieve data from the [JSON Placeholder API](https://jsonplaceholder.typicode.com/) and display it. Set the limit default to 10. When the page loads up, it will use the default value.

Similar to the previous templating labs, use bootstrap cards and grids to layout the returned post data from JSON Placeholder on the page.

## Exercise 7: Lab – CSS Animation (Page 75)

Simple animation, make sure to follow the instructions.

## Exercise 8: Moment.js Dates (Page 88)

For question 2 (years, months & days between birthdate and current date), don’t fret too much if you don’t get a *hyper* accurate representation. Make sure you follow the Moment.js documentation to know the kinds of functions available and make best use of them.

## Exercise 9: Apache E-Charts Lab (Page 94)

You will need to fetch data from the Fake Store API and then process it to extract the data for the chart.

## Exercise 10: E-Commerce page (Page 95)

Try to do at least the first 3 points: fetch the Fake Store product data, use templating to display it via bootstrap cards, and include a drop-down to allow users to filter the products by category.

The remaining exercises are optional, so try them if you’re ahead of time and/or wanting a challenge.

The first mini-project is given at the end of Module 4, so the extra time may be better spent working on your mini-project instead, OR you could choose to include even more features and extend this exercise into becoming your mini-project.