Welcome to Module 2 of the IOD Software Engineering course!

This is a handy guide to help students make sure their lab work is easily understood and completed. Make sure to ask your trainers if you have any questions about how to complete these exercises.

Trainers will release answers once everyone has had a chance to complete them, but often there are many possible answers so don’t worry if yours are different. The extensions are there for students who have extra time after completing the main exercises - they are not required.

| **Lab Exercise 1:** | **Slide 50** |
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**Instructions**: Download the **lab-1-html** folder from Google Drive (same place as this document). Use the files in the **src** folder as a starter for completing the instructions in **instructions.docx**.

**Goal**: To practise using common HTML tags and become familiar with best practice usage for building a modern web page.

**Submission**: Create a new folder for **Module 2** that you can include in a GitHub repository. You may wish to re-use the same private repo from Module 1 and include a new folder in there, or create a separate private repo. Group all Module 2 exercises in the same folder, with separate subfolders for each exercise, and commit your changes once complete. Ensure your trainers have access.

**Extension**: Follow the instructions in **instructions-2-optional.docx** to set up a mock testing back-end server, and link it to your form to receive the submitted data.

**Resources & Extra Learning**:

* <https://developer.mozilla.org/en-US/docs/Learn/HTML>
* <https://developer.mozilla.org/en-US/docs/Learn/Forms>
* <https://web.dev/learn/html/welcome>
* <https://html.com/>
* <https://developer.mozilla.org/en-US/curriculum/core/semantic-html/>

| **Lab Exercise 2:** | **Slide 69** |
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**Instructions**: Download the **lab-2-css** folder from Google Drive (same place as this document). Use the files in the **src** folder as a starter for completing the instructions in **instructions.docx**.

**Goal**: To practise using common CSS selectors and rules and become familiar with best practice usage for styling a responsive web page.

**Submission**: Create a new folder for **Exercise 2** in your **Module 2** folder/repo. Store and commit your completed code there and ensure your trainers have access.

**Extension**: Test your knowledge with the CSS Selector Game: <https://toolness.github.io/css-selector-game/> and practice by trying to style a biography page: <https://developer.mozilla.org/en-US/docs/Learn/CSS/First_steps/Styling_a_biography_page>

**Resources & Extra Learning**:

* <https://developer.mozilla.org/en-US/docs/Learn/CSS>
* <https://developer.mozilla.org/en-US/docs/Learn/Forms/Styling_web_forms>
* <https://web.dev/learn/css>
* <https://blog.hubspot.com/website/css-tutorial>
* <https://www.htmldog.com/guides/css/beginner/>
* <https://developer.mozilla.org/en-US/curriculum/core/css-fundamentals/>

| **Lab Exercise 3:** | **Slide 80** |
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**Instructions**: Download the **lab-3-flexbox** folder from Google Drive (same place as this document). Use the files in the **src** folder as a starter for completing the instructions in **instructions.docx**.

**Goal**: To become familiar with using flexbox as a layout model to style responsive web pages.

**Submission**: Create a new folder for **Exercise 3** in your **Module 2** folder/repo. Store and commit your completed code there and ensure your trainers have access.

**Extension**: Choose a project from <https://www.frontendmentor.io/challenges?difficulty=1&languages=CSS&type=free> to try and implement.

**Resources & Extra Learning**:

* <https://css-tricks.com/snippets/css/a-guide-to-flexbox/>
* <https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_flexible_box_layout/Basic_concepts_of_flexbox>
* <https://www.codecademy.com/courses/learn-css-flexbox-and-grid/lessons/learn-flexbox/exercises/what-is-flexbox>
* <https://v2.scrimba.com/learn-flexbox-c0k>
* <https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Flexbox>
* <https://web.dev/learn/css/flexbox>

| **Lab Exercise 4:** | **Slide 81** |
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**Instructions**: Follow the instructions in the **lab-4-build-your-own-website** folder from Google Drive (same place as this document). Start from scratch and don’t use a template. It may help to sketch a quick design first or find a style you want to copy, then build the HTML structure and style it with CSS (stored in separate files).

**Goal**: To practise using HTML and CSS to build a real-world simple one-page resume website.

**Submission**: Create a new folder for **Exercise 4** in your **Module 2** folder/repo. Store and commit your completed code there and ensure your trainers have access.

**Extension**: Add some more advanced features to your site, by copying and personalising elements from other professional resume websites (some examples here: <https://www.wix.com/blog/resume-website-examples> or find your own).

**Resources & Extra Learning**:

* <https://developer.mozilla.org/en-US/docs/Learn/Accessibility/HTML>
* <https://www.browserstack.com/guide/build-a-website-using-html-css>
* <https://www.w3schools.com/howto/howto_website_create_resume.asp>

| **Lab Exercise 5:** | **Slide 92** |
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**Instructions**: Follow the instructions in the **lab-5-responsive-website** folder from Google Drive (same place as this document). Start with the same HTML and CSS from Exercise 4 and add media queries to adjust your site to look good on all devices (use the device toolbar in the Dev Inspector to view on phone-sized screens).

**Goal**: To practise using responsive HTML and CSS to build a real-world simple one-page resume website.

**Submission**: Create a new folder for **Exercise 5** in your **Module 2** folder/repo. Store and commit your completed code there and ensure your trainers have access.

**Extension**: Choose a project from <https://www.frontendmentor.io/challenges?difficulty=1&languages=CSS&type=free> to try and implement.

**Resources & Extra Learning**:

* <https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Responsive_Design>
* <https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout/Media_queries>
* <https://www.w3schools.com/css/css_rwd_intro.asp>
* <https://web.dev/learn/design/welcome>