COMPSCI 345 / SOFTENG 350

Assignment 2: High Fidelity Prototype

Landing page and registration form for a carbon footprint website, and a report

Worth 30% of your final grade

This assignment will be completed individually
Each student should plan to spend 18 hours on this assignment

First, verify your submission with our Validator
Second, upload your submission to BOTH Canvas and to Assignment Dropbox
Due June 2nd 2022, 6:30pm

Aim

The aim of this assignment is to develop a hi-fi prototype as a mock-up Web interface. The assignment allows you to practice skills in high fidelity design, Web technology, HTML, CSS, and JavaScript. It will require you to put the visual design principles discussed in class into practice. Lastly, the assignment demands that you adopt an inclusive design practice by taking web accessibility into consideration.

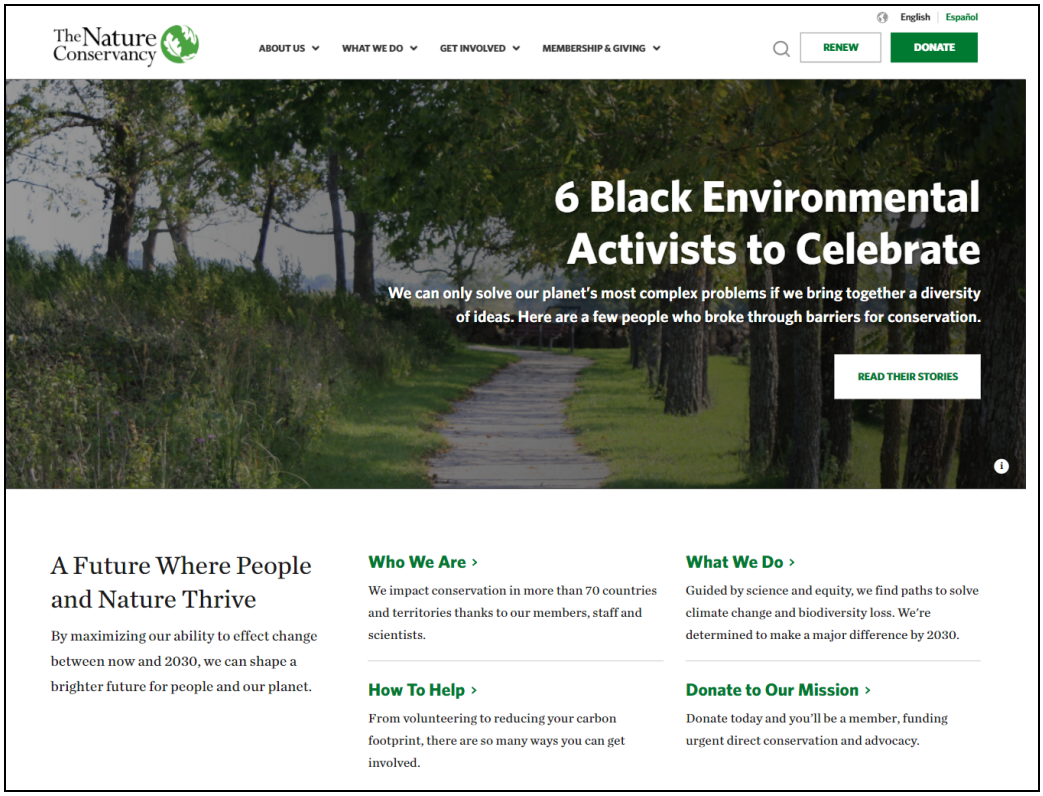


Figure 1 - Screenshot taken from a carbon footprint themed website. Your prototype should have comparable visual complexity to this example.

Background

Imagine that you've been asked to design a website for a business called "Carbon Tiptoe! (CT)" including its registration form. CT intends to use this website in order to enable users to calculate and compare their carbon footprints.

A combination of usability, visual appeal and accessibility will make sure the visitors get the most out of your site, building the foundation for an exceptional user experience. The login or registration form is a typical part of websites that provide personalized services. The user experience of the website and such online forms supports the relationship between the service and its audience.

You are tasked with developing their website. It should include a registration form which will allow new members to fill up their details and submit the form. The business will then handle future carbon footprint initiatives and other member benefits.

For this assignment, you will have to prototype only:

1. the homepage and
2. the online registration form

The design should be suitable for a standard full desktop. You are designing for a high-fidelity prototype therefore, it doesn't need to be fully functional (i.e., the prototype does not connect to a database, nor does it actually submit the form field input). Error checking for format of addresses, passwords, mobile number, is out of scope.

High Fidelity Prototype

Part 1 Main page

Design a homepage for CT, there are no restrictions as to what you can include in the homepage, as long as you stay with the topic of carbon footprint calculators. You are NOT required to actually include a functioning carbon footprint calculator, rather, you just need an informative and appealing homepage.

You should also include a navigation bar, a supporting image and a primary call-to action (in this case a button or link for registration). Make use of the visual design principles discussed in class and take into account the basic accessibility guidelines.

The screenshot in figure 1 shows an example of a website similar to what CT wants.

Also remember that your design should be suitable for a 1920x1080 screen, your design does not need to be responsive.

If your monitor is not 1920x1080, there is a simple way to visualize these dimensions in your web browser. See Q10 of the Q&A.

The organisation has a particular brand colour that they want used in the website, and this is sent to you via your UPI email. You will use it as the main theme colour, and you must use it in several parts of your main page design. You can use the assigned colour either as a foreground or as a background. It doesn't have to be applied to all elements, but it must be emphasised and present in multiple html elements in the homepage.

Your website has to meet the accessibility guidelines for colour contrast.

In HTML, colours are defined using the attributes 'color' typically for foreground elements, such as text or borders on a background; and 'background-color' which is a colour used to fill a background. Imagine that you are working with a design team that requires standardised naming of HTML elements.

To apply the assigned colour to elements in your design, there are two steps:

1. you are required to define CSS class selectors in the exact format described below (with the example assigned colour **#ffffff**) and
2. you must reference the CSS class selector in the element. This means, all elements that use the colour should explicitly do so in your source code, and not for example inherit the colour through other styles.

Please note that we are using **'color'** not **'colour'** as the spelling for the selector for consistency with other syntax elements.

Here are the examples of correct and incorrect definition and usage of the CSS class selectors.

CSS class selector format in your CSS file:

```
.custom-color {
        color: #ffffff;
}
```
(correct because correct CSS class selector name)

```
.custom-background-color {
        background-color: #ffffff;
}
```
(correct because correct CSS class selector name)

```
.custom-colour {
        color: #ffffff;
}
```
(incorrect because incorrect CSS class selector name)

```
.assigned-background-color {
        background-color: #ffffff;
}
```
(incorrect because incorrect CSS class selector name)

HTML referencing format in your HTML file (if you want to use the colour for an element):

TEST **(correct because colour class is referenced)**

TEST **(correct because colour class is referenced along with other selectors)**

TEST **(incorrect because colour class not referenced)**

Part 2 Registration form

Design a registration form for a CT member. The form should be in a modal window that pops up as an overlay on top of the homepage. The modal window only appears if you click the registration button or link from the homepage.

The modal window should also have a close button (usually a button labelled "x") that closes itself and restores the homepage. This can be achieved using a simple JavaScript code. The button or link that you click to trigger the opening of the modal window must have an id of "trigger-modal".

For example:
Register

Your form should have exactly 3 sections with all of the 8 following input fields (each is exactly only 1 input field):

- User Details
    - Given name
    - Surname
    - Username
    - Password

- Addresses
    - Home Address
    - Work Address

- Contacts
    - Mobile Number
    - Email

For the purposes of this assignment, do not add any additional sections or form fields to the registration form which differ from the above specified sections and fields.

For simplicity, your form should keep these three sections within ONE column. The visual subdivision into the three sections should only use proximity.

Imagine that your design team requires that the three sections have the **exact div ids**:

- userDetails (For example:)
- addresses (For example:)
- contacts (For example:)

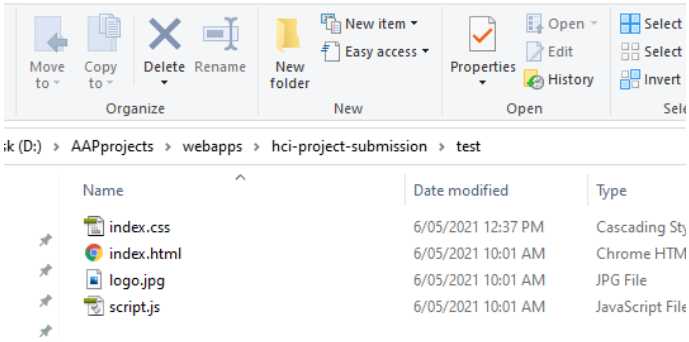
Remember to use these **exact** div ids for each section.

Your design team also requires that you enclose the entire form with a div html element with the id 'ct-form'. For example, <form>…</form> .

In general, the HTML should be well-formed. This can be achieved by using some of the free IDEs that check markup.

Assignment File Structure/Folder Requirements

While folders are usual for web file organisation, for the purposes of this assignment **you must not have any folders**. All of your files, such as your CSS and image files, should be in the same folder where your index.html file is located. Do not put any files in folders or subfolders. Your directory structure should be similar to the file structure below for example:



The examples below show you how you call local files from your html:

<link rel="stylesheet" href="index.css"> **(correct)**

<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css"> **(correct)**

<link rel="stylesheet" href="css/index.css"> **(incorrect because it's in a subfolder)**

<script src="scripts.js"></script> **(correct)**

<script src="js/scripts.js"></script> **(incorrect because it's in a subfolder)**

For questions see section 12 to 14 of the Q&A.

The Report

You will also need to submit a report. In the report, describe the rationale behind your visual design choices.

We recommend including annotated screenshots for more clarity and professionalism. We expect that the length of the report would be max 1200 words (including titles/headers/figure captions and excluding references).

Submission instructions

Use the Validator Prior to Submission

We have developed a web-based syntax Validator application to help you ensure that your submission meets certain technical specifications. (The Validator will check most but not all of the technical requirements in this assignment). You can submit a .zip file to the Validator which can be accessed from the following link: https://hci-validator.researchprogrammerhub.cloud.edu.au/ You will need to login using your university email (i.e. your_upi@aucklanduni.ac.nz)

There are no restrictions as to how many times you use the Validator. You can validate your assignment as many times as you need to.

We reserve the right to reduce marks for any technical specifications not followed. Passing all the Validator Syntax tests is a good indicator that your assignment meets technical specifications but you are responsible to check for all specifications.

In case of issues with the HCI Assignment Validator web app, please contact d.dimalen@auckland.ac.nz.

Submission Overview

You will need to submit in two places.

1. to Canvas all files including the Report in PDF format, as a zip file
2. to assignment Dropbox https://adb.auckland.ac.nz/ all files (except report) as individual files (no folders, no zip)

Please submit in **BOTH** Canvas and Dropbox.

Assignment Dropbox Requirements for Submission

You must submit all files to Assignment Dropbox, except the report. Example files are index.html, styles.css, script.js, all submitted as individual files.

All of your files, such as your CSS and image files, should be in the same folder where your index.html file is located. Do not put any files in folders or subfolders.

A2 Submission Marking Scheme

For evaluating the compliance of the submission, e.g., with accessibility guidelines, we will use manual marking and we may use tools to check, e.g., colours. Please recall that only W3 CSS is allowed.

Report
Quality, clarity of justifications for user experience, Gestalt principles, balance, emphasis, unity, colour scheme for main page and form. (7 points)

Visual design
Overall quality of user experience, Gestalt principles, balance, emphasis, unity, colour scheme for main page and form. (7 points)
Common Fate Form follows the Gestalt principle of Common Fate. (2 points)
Proximity Form visual subdivision only uses the Gestalt principle of Proximity. (2 points)
Colour Assigned colour is emphasised and present in multiple screen elements. Colour contrast meets accessibility guidelines. (5 points)

Functionality
Accessibility Submission follows accessibility guidelines presented in lecture. (6 points)
Functional correctness Form pops up as specified. No bugs. (1 point)

Technical Specifications
All instructions and specifications have been followed. No errors from Validator. The HTML is well-formed. (Up to -6 points)

Q & A

This section includes common questions regarding the projects. If you still have any questions don't hesitate to ask on Piazza.

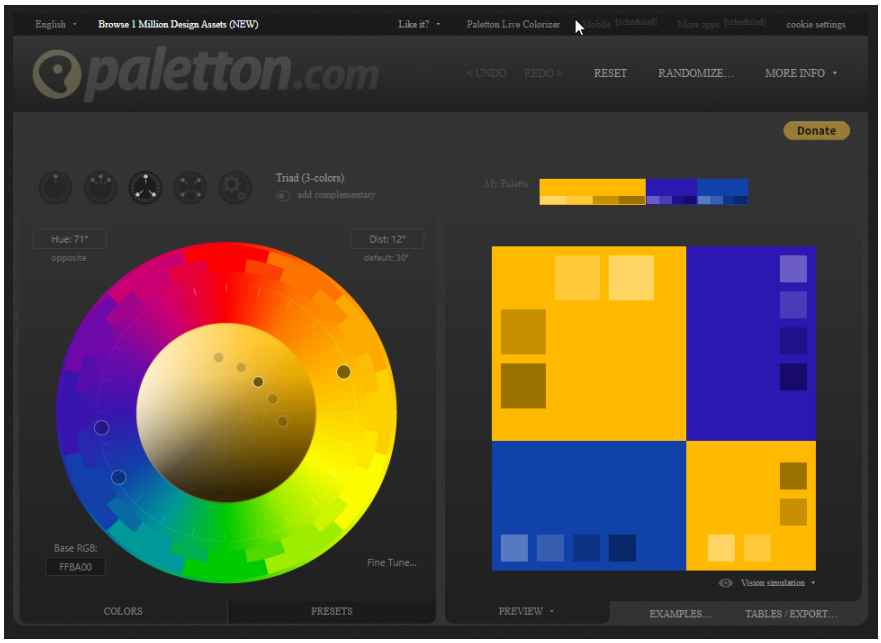
Q1: Can I use other colours?

A:
Yes, you can, but you need to include the exact colour you were given a few times on the website, and also theme your colour scheme around said colour.

Your whole website does not need to comprise of only your given colour, you can use a colour scheme such as complementary or analogous colour scheme that contains your colour.

Remember, the intuition behind the assigned colour is that this is the brand colour of our customer. So the customer wants to receive a solution that fits to the brand in terms of colour. Additionally the use of the colour should be discoverable by using the css naming scheme that is prescribed. You could imagine a design reviewer and brand owner using this to check on all the uses of the brand colour.

E.g., if my colour was #FFBA00 I would play around with https://paletton.com. And find similar/complementary shades I could use.



Q2: Can I use inline styles?

A:
Yes.

To clarify, inline CSS is having the styling code inside the HTML file, and not in a separate CSS file. You are allowed to either have a separate CSS file or use inline styles.

Q3: Will I get full marks if my project passes the validator?

A:
No, the validator is a tool to help catch any formatting errors you may have; it will not mark your project.

Q4: Can we use Google Fonts?

A:
Yes.

Q5: Can we use templates?

A:
You may browse for templates only from w3school's w3.css templates.
https://www.w3schools.com/w3css/w3css_templates.asp.

But you need to ensure that you modify the template substantially, to make it your own.

No other templates other than the ones mentioned are allowed. You are not allowed to use anything that generates code for you. The reason for this approach is that downloading a template that sets the colour scheme, the font scheme or has a creative layout isn't your own work. Intrinsically, this assignment does not require elaborate toolkits, given the super-limited functional requirements of the system. The assignment focuses on making good design choices rather than implementing maximum functionality.

Q6: Can we use External Style Sheets?

A:
You may only use w3.css and Fontawesome. No other stylesheets are allowed in this assignment (i.e. bootstrap). The intuition behind this is that we assume the customer has this restriction as part of its web programming guidelines.

Q7: Does the website need functionality?

A:
No, the only functionality you need is to open and close the pop-up modal. You do not need to include anything more complex.

Q8: Do we get better marks for responsive websites?

A:

Although we encourage it, this assignment will not mark you based on website responsiveness, so there are no marks for website responsiveness.

Q9: Can I use multiple HTML files?

A:

No, please only use one HTML file named ‘index.html’.

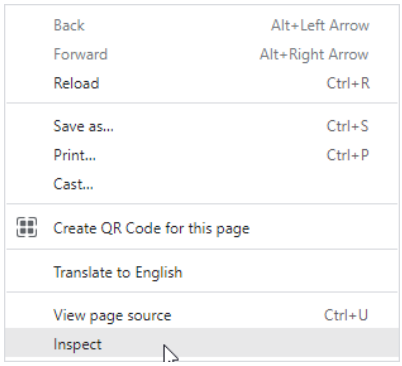
Q10: How do I make sure my website is suitable for a 1920x1080 desktop?

A:

The examples shown will be for Microsoft Edge and Google Chrome, though most web browsers should support this function.

You may follow these steps

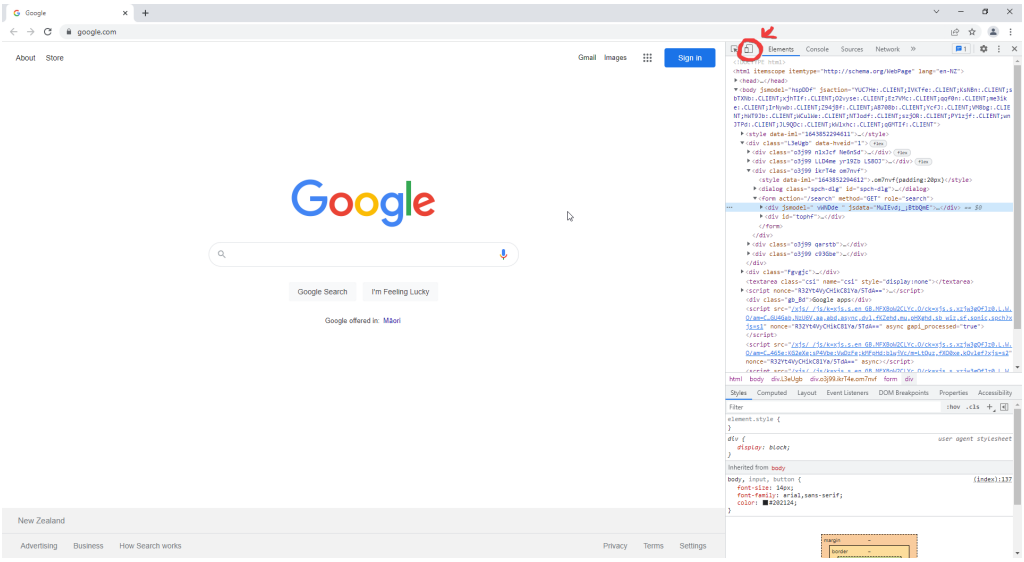
1. Right click anywhere on the browser.
2. Click ‘inspect element’.



3. You should now see the ‘developer tools’ section. (By default it is on the right)
4. Click the ‘toggle device toolbar’ icon.

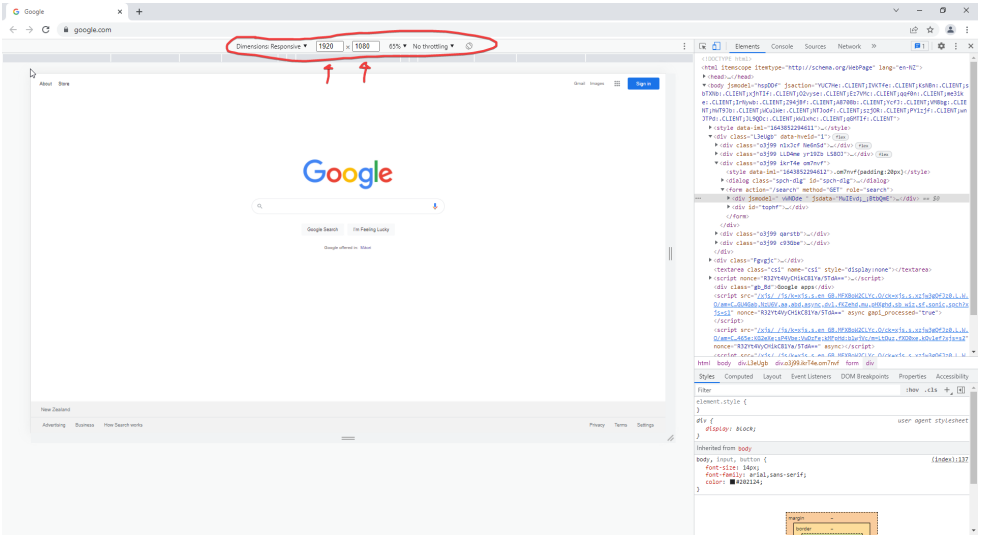
   It should look similar to the image: 

   It is also highlighted in red in the following screenshot.



5. Now you should notice some changes to the browser.

   Near the top of your browser (just under the address bar), you should see two input fields. Set the dimensions to 1920 x 1080.



6. Now you can see your browser in 1920x1080 resolution. These are the dimensions that your marker will see your website in.

Q11: Can I add more sections to my form?

A:

No, please only add the sections mentioned in the specifications.

Q12: Can I have multiple input fields per question?

A:

No, each question can only have one input field.

Incorrect (showing two input fields side by side):

Address

Correct:

Address

Q13: Can I separate the sections into multiple columns?

A:

No, all the sections and their corresponding questions must be within one column.

Q14: Could I submit my github repo?

A:

No -- you must follow every single submission instruction precisely as they've been laid out. Each instruction is there for a reason. Please ask us in lecture if you are curious!

Q15: How should I check the colour contrast of web elements?

We recommend: https://webaim.org/resources/contrastchecker/

Q16: Can I work from my contributions to the low-fidelity prototype from Assignment 1?

Yes! You can reuse the layout that you designed in A1 but you cannot share code or collaborate with peers in refining your high fidelity prototype.

You do not have to reuse the layout from your A1.

Sources

Carbon footprint website example - https://www.nature.org/en-us/