# Development and Testing

### References

Contact Form : The contact form used on our site was created by  Dr Emma Norling from slides 21-23 of her presentation on Web and Internet technology.

Normalize File : The normalize file was produced by Nicolas Gallagher and was found at nicolasgallagher.com/about-normalize-css.

### Design Changes

The first part of the design that was changed is the decision to include a privacy statement. Upon reflection, the contact form requires the user to give their name and email address so a privacy statement would be essential. The website is asking for personal information so we need to follow the data protection guidelines (GDPR). We will write this is as a statement under the accessibility page.

Instead of a bright and modern colour scheme we have decided to go with the shade of blue on the University's badge. We felt that this would be more suitable seen as the website is about the University's Students' Union.The icon for the site previously contained the words 'Building Guide' (Figure 1). We decided to remove this as the words were too small to read on mobile devices (Figure 2).

**Figure 1-** Old Icon

**Figure 2-** Updated Icon

The 'Where to find us' page was originally only going to appear under the 'Contact Us' page. This link to this page has now been moved to the footer. Now the user also has less clicks before they find their desired information.

We had originally decided to have a search bar on every page but we decided that this was not feasible in the amount of time we had for the assignment. Also the site is a relatively small sight and information is really easy to find so the search bar is not necessary.

## Organisation

Each page on the website follows the same basic template. Each page has a banner, navigation bar, main body of content and a footer. The reuse of this code main updating the website more efficient.

Only one CSS file was created ourselves for styling. We also added a normalization sheet meaning any difference between the way different browsers render the page are made the same.

All the files were kept in the same folder except for the images and fonts which were grouped together separately. There was no need to group them together further due to the limited number of pages. Also, all these files have a direct link to each other.

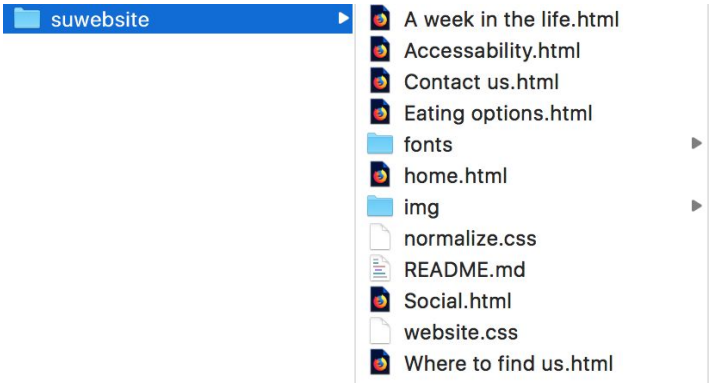



**Figure 3 -** File Structure

The text editor we used was called Brackets which enabled live previews and therefore made debugging a much more efficient progress. It also highlighted syntax errors when coding. JavaScript was mainly debugged through the console.

The navigation menu is organised in order of importance. It is essential for the home page to go first as this provides the core information for the page.

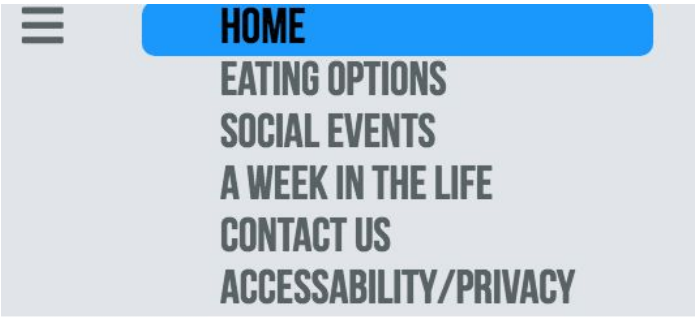



**Figure 4 -** Navigation Menu

We used JavaScript to create the hamburger menu. This improved the mobile design as previously the navigation was taking up too much of the limited screen space. JavaScript was used to change the CSS applied the navigation and therefore whether the menu is open or not when the icon is pressed.

### Optimisation

One method by which we optimised the project was efficiently grouping the CSS properties. Classes and IDs were used appropriately and only when required. If we had more time, we could add lower resolution placeholder images which would load faster. This was a method found upon research from a blog on Medium (Smits, 2017). The use of responsive design itself will 'reduce load time' as no redirection is required (Google Developers, 21).

### Security

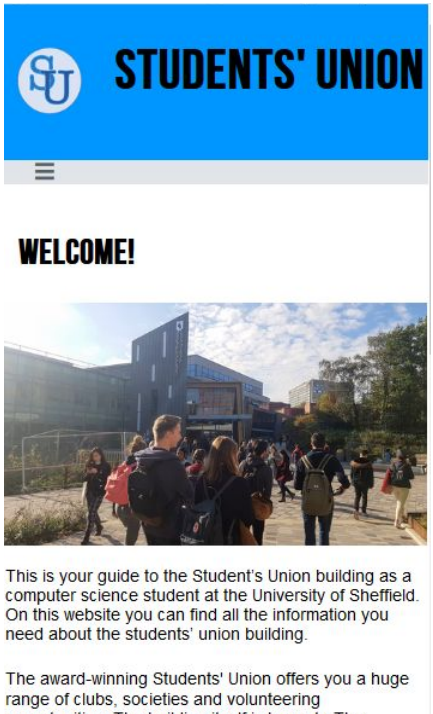
By creating a form that users can use to email us there is a large security risk. The risks associated with allowing user input include cross site scripting. To avoid this a function should have been applied to the input to escape the string and sanitizing the users input. Currently the author's email is being exposed which is unsafe as it will be used for spam. Also, the connection to the email server could be abused. Another way security could be improved by the use of tokens.

If our website was put online it should have an SSL certificate so that users can trust their information is being sent over a private connection.

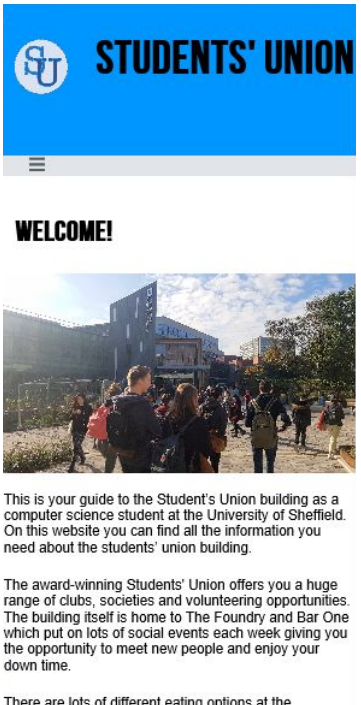
### Testing

In testing we are considering four browsers. The four browsers are Firefox, Internet Explorer, Google Chrome and Safari. For each browser we will test that the website works on full-screen, half-screen and mobile-size. We also need to consider accessibility when testing the website.

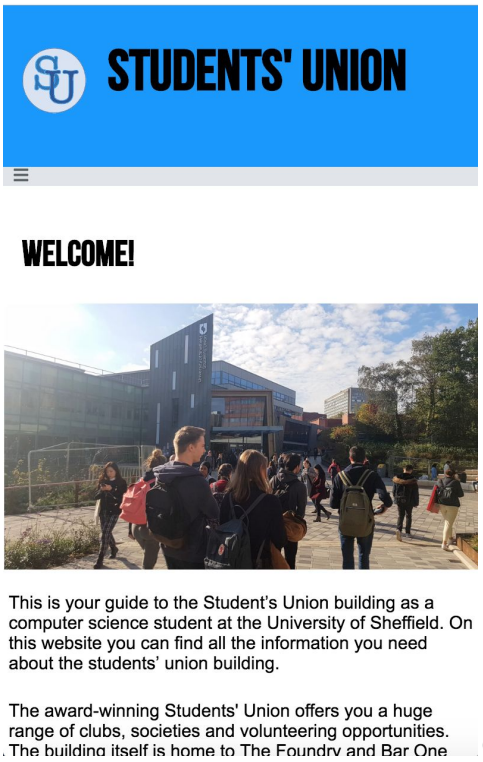
**Mobile-screen**



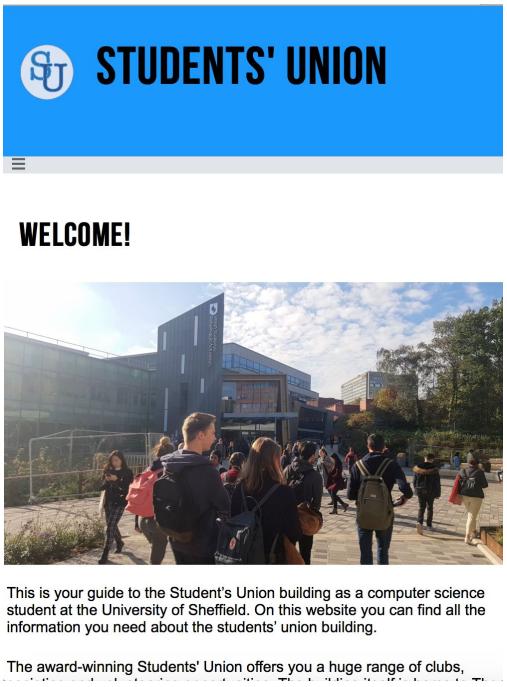

Firefox




Explorer

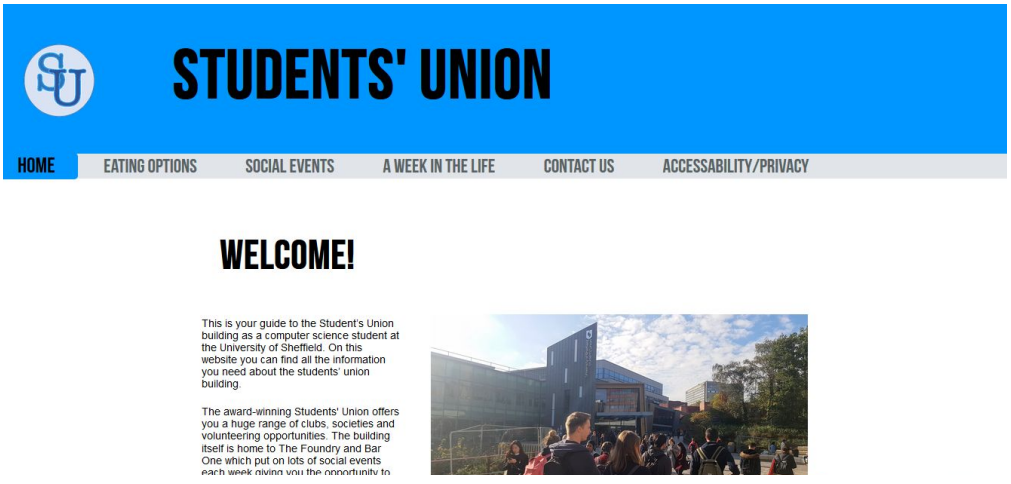



Chrome

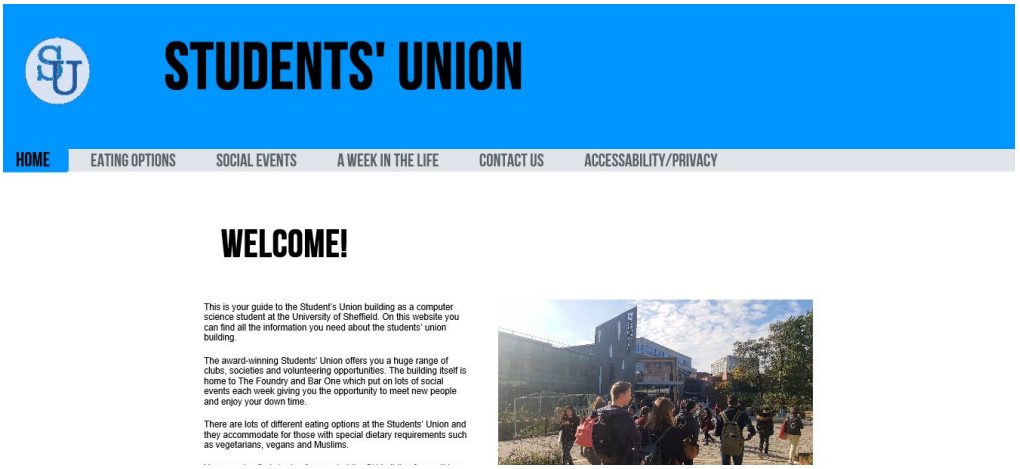



Safari

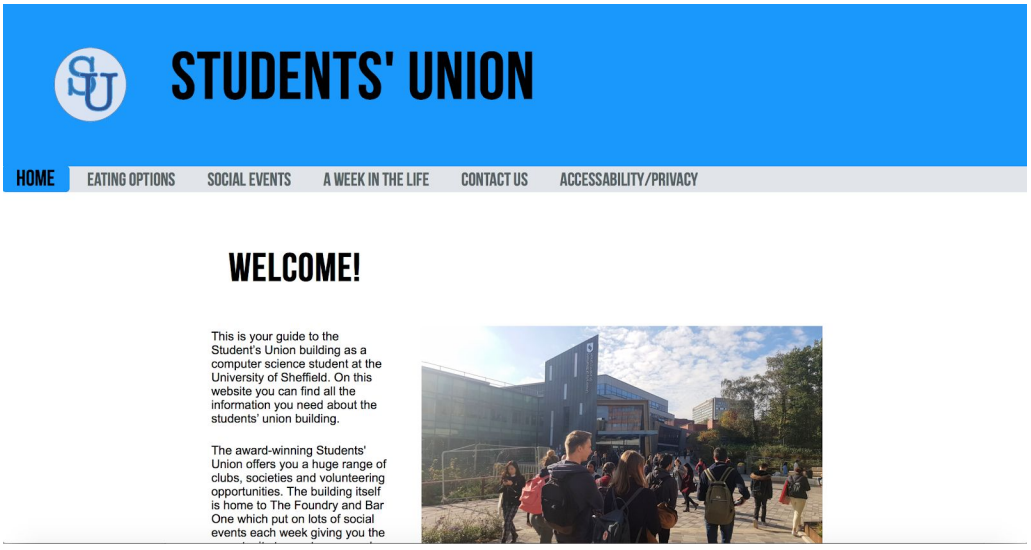
## Full-screen



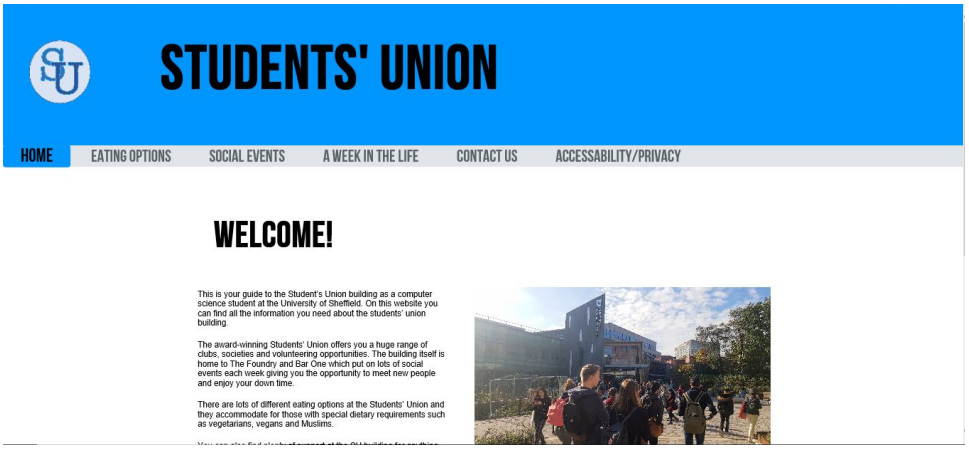

Firefox




Chrome

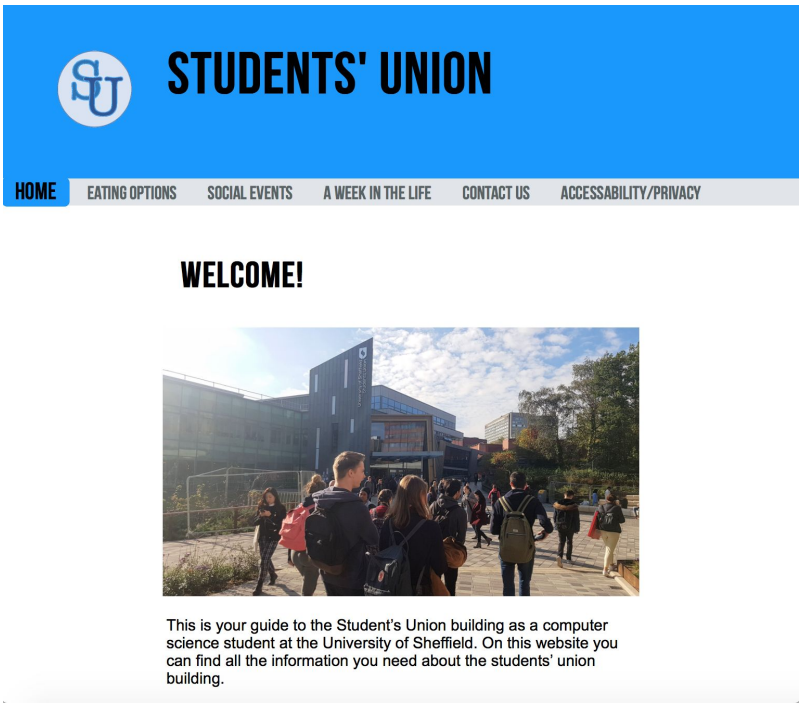



Safari

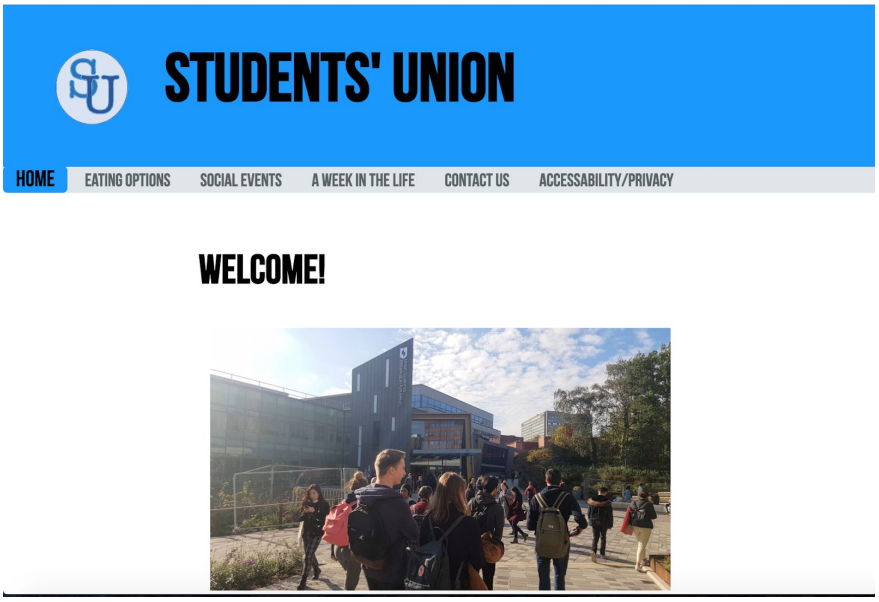



Internet Explorer

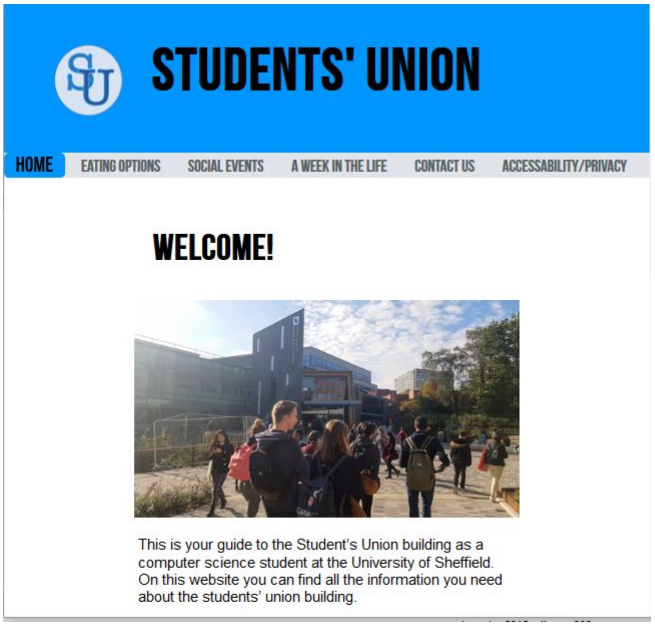
## Reduced-screen



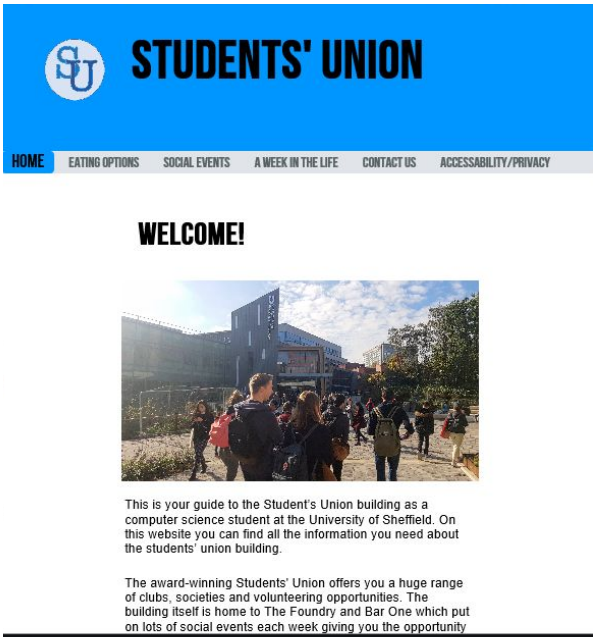

Safari




Chrome



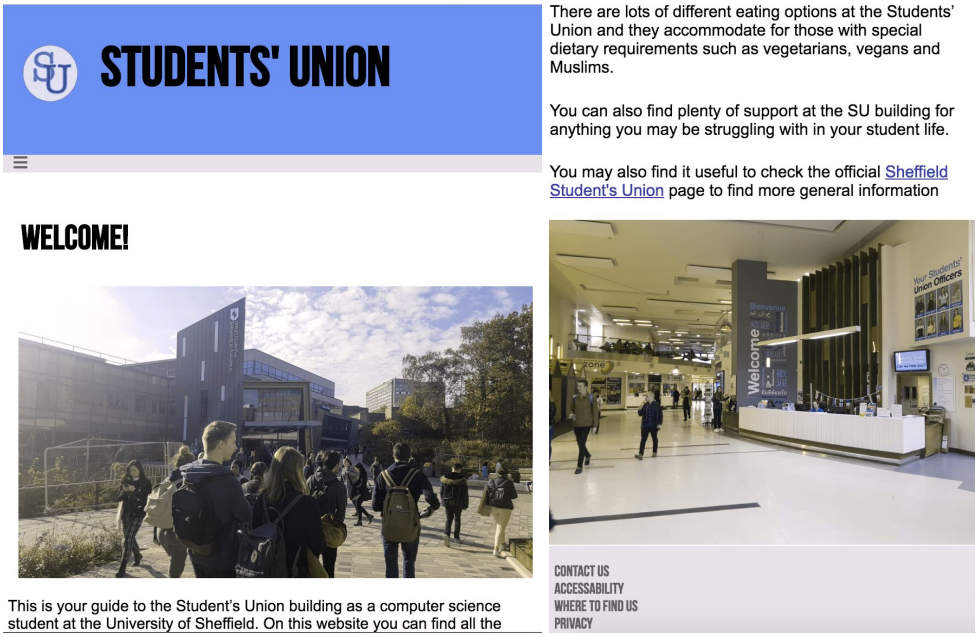

Firefox




Internet Explorer

**Accessibility**

All non-text elements have a text element in accordance with the W3C accessibility guides meaning screen readers can describe the images on screen.




Using a colour blind filter for Protanopia all the content of the website is still visible meaning the website is accessible to colour blind users.

**Evaluation**

Overall, the website contains all the key information needed for a computer science student using the Student's Union. The website is easy to navigate as all links are easily accessible. The most important part of this project was the mobile first design. The two clear breakpoints make an effective design for small screens as the images are centred into av vertical column. If we were to make the site again we would add more pages to include different information. The design could be made more sophisticated given more time to work on. Other features we could include could have been slideshows of images and other multimedia content.

# Bibliography

Google Developers, 21. *Responsive Web Design.* [Online]
Available at:
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[Accessed 22 November 2018].