

Introduction to Web Design

Website Implementation Report



THE UNIVERSITY OF QUEENSLAND
A U S T R A L I A

Faculty of Engineering, Architecture and Information Technology

Thulith Wilfred Mallawa
May 2022

Contents

1	Introduction	3
1.1	Website Overview and Purpose	3
2	Design Approach	3
2.1	Structure	3
2.2	Version Control	3
2.3	HTML and CSS	4
2.3.1	HTML Structure	4
2.3.2	CSS Implementation	4
2.4	JavaScript Implementation	4
2.4.1	Functionality implemented with JS	4
3	Implementation changes	5
3.1	Overall UI Design	5
3.2	Colour Scheme	6
3.3	New Features	6
3.4	Features Removed	7
4	Site Evaluation	7
4.1	Relevant Usability Heuristics	8
4.1.1	Match between system and the real world	8
4.1.2	User control and freedom	8
4.1.3	Recognition rather than recall	8
4.1.4	Aesthetic and minimalist, consistent and flexible design	8
4.2	Secondary Heuristics	9
5	Conclusions and Future Work	9

1 Introduction

1.1 Website Overview and Purpose

The following implemented website is an information website for the University of Queensland. It aims to inform visitors, students and staff about locations and news about the St Lucia campus. The website is thereby named The UQ Scoop.

The implementation of the site develops and completes the proposed low/high fidelity development plans presented in the prior ‘Design Report’. However, numerous changes have been made to the prior proposed plans improve quality of life and better overall usability of the site.

The following report aims to document the development of UQ Scoop, and to evaluate it against the relevant usability heuristics to determine how it is expected to perform for its target audience.

2 Design Approach

The following section documents the implementation of HTML, CSS and JavaScript source into the developments of the site.

2.1 Structure

The source code for this website, composed of HTML, CSS and JavaScript is structured as follows:

```
/  
└── css/  
    └── style.css  
└── html/  
    └── sources.html  
└── js/  
    └── scripts.js  
└── index.html
```

This directory structure is enforced to ensure a high level of modularity and readability for the source.

2.2 Version Control

The source for the UQ Scoop, is version controlled on **GitHub** using git (in a private repository), to be made public following this submission. Version control for this project is to primarily to keep track of changes.

2.3 HTML and CSS

As seen in *section 2.1*, both style sheets (css) and html source files have been split into their own directories. The ‘index.html’ file, serves as an entry point to the website and holds the source for the Homepage.

2.3.1 HTML Structure

All html source files follow a predefined structure that is specific to this project. A page starts with html source for the primary navigation bar, followed by the contents of the page. The contents of the page will differ from page to page as it represents a unique page. Finally, the page is completed by the source for the fixed navigation bar, which allows quick access to particular pages.

2.3.2 CSS Implementation

The source for UQ Scoop is composed of multiple style-sheets. The style sheets are split into multiple pages, where each sheet represents a particular aspect. For example, style-sheets that govern the style of a slideshow, would be consequently named ‘slide.css’. If any style changes are to be made for a slideshow, this ensures that the only file that need to be modified is the singular ‘slide.css’ file.

2.4 JavaScript Implementation

The UQ Scoop implements animations and dynamic changes to site that are implemented using JavaScript. As above, the JavaScript files are contained within their own directory and is split into isolated files that implements functionality unique to that file. For example, the functionality that implements slide transition in a slide show, would be a function defined in ‘slides.js’ file.

2.4.1 Functionality implemented with JS

Some of the key aspects of the website have been implemented with JavaScript. The following section documents some key functionality implemented with JavaScript.

- Slideshow image transitions
- Fixed navigation bar, dynamic colour change
- Draw colourful cursor to follow mouse pointer
- Drop down navigation for mobile
- Draw animated text

Where functionality is shared across pages, the html page will simply include the relevant “*.js” file and invoke the respective function(s).

3 Implementation changes

From the design of UQ Scoop to it’s implementation, numerous changes have been made to the initially proposed design to improve usability and the overall experience of the site based on user feedback. The following section will document these changes.

3.1 Overall UI Design

Initially, it was proposed to have a navigation bar that would span across the top of the website, composed of segmented drop down buttons that lead to additional options. However, it was found that when translating this design to a mobile platform, it would lead to nested menus that look cluttered.

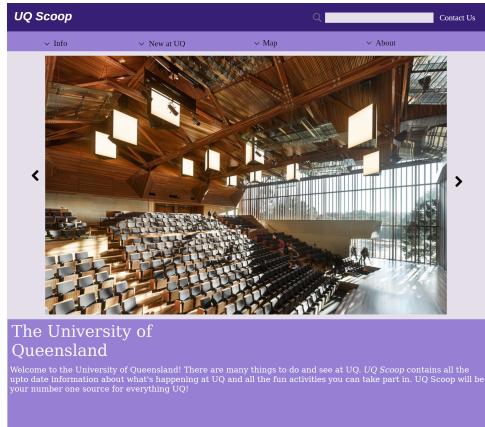


Figure 1: Proposed Home Page

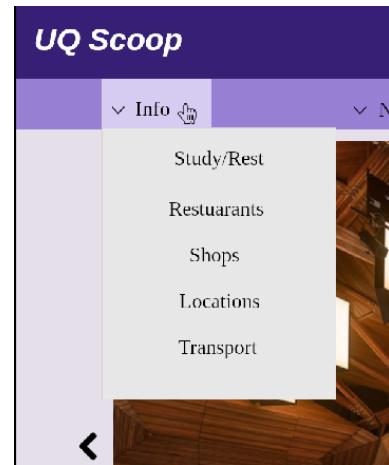


Figure 2: Proposed Home Page drop down menu

To rectify this, a single level navigation menu was added . The first option ”Places”, would lead to a page that would act as a ‘categories‘ page, where the user can pick to see places they are interested in, i.e. cafes. shops. This single level navigation bar can easily be made a responsive drop down menu for mobile users as seen in the figures below.



Figure 3: Final Homepage

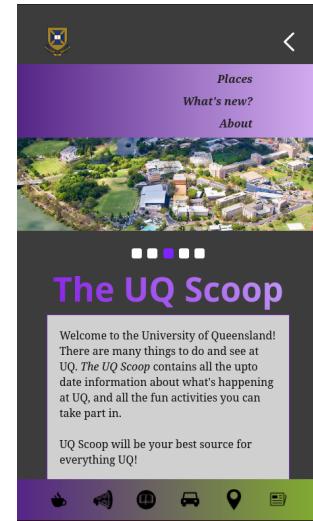


Figure 4: Final Homepage Responsive

3.2 Colour Scheme

The initially proposed colour scheme for UQ Scoop, consisted primarily of a purple background. This was changed due to feedback from sample users, that mentioned a brighter background creates less contrast with the foreground therefore making the foreground text difficult to read for some users. To address this, the overall colour scheme was changed to a more darker scheme with purple accents to represent the colour scheme of the University, as seen below.

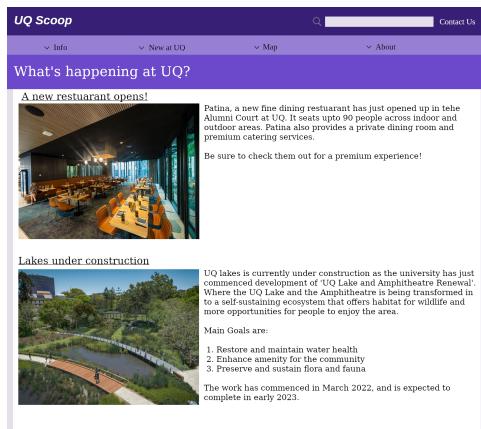


Figure 5: Proposed colour scheme

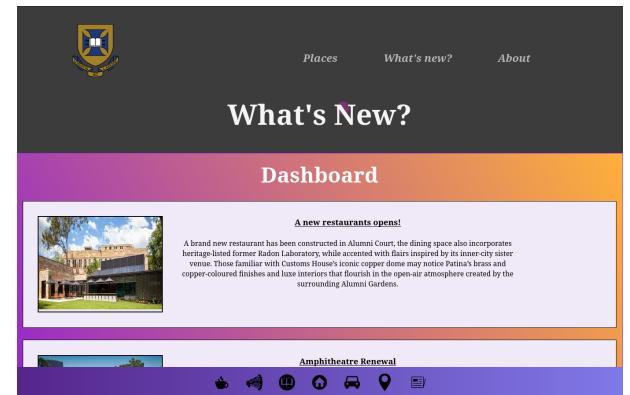


Figure 6: Final Colour scheme

3.3 New Features

The final design of the website adds some new features to the initial proposed design, however, these are mostly visual/aesthetic based, such as animations. Some of the new

additions include, a colour changing cursor that will track the mouse pointer, a fixed navigation bar (that changes colour) and animated text.



Figure 7: Fixed Navigation bar for fast navigation

The fixed navigation bar seen in the figure above, implements features such as pop and highlight over hover (see the pizza icon), as well as a background that changes colours in a gradient with respect to the colour scheme (purple/blue).

3.4 Features Removed

With respect to the proposed design, one key feature was removed from the implementation of the final design. That is, the UQ Maps page. This page was proposed to embed Google Maps html into the page to develop an interactive map of the campus. However, it was found such a map already exists within the official UQ website. Thus, a decision was made to instead link to specific location on that page when clicked on places of interest from the UQ Scoop. For example, if a user were to click on "Merlo Cafe", it would show in the map (from the UQ site), where it is located.



Figure 8: i. Clicking on Merlo Cafe

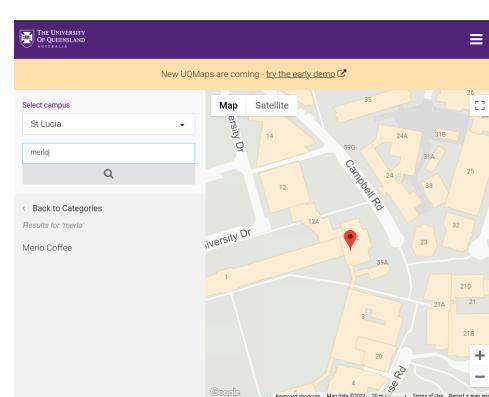


Figure 9: ii. Jump to location

4 Site Evaluation

As per initial design goals stated in the "Design Report", UQ scoop was developed for a particular target audience. As such, the following section evaluates the design of UQ Scoop against Nelson's usability heuristics.

4.1 Relevant Usability Heuristics

The following Nelson's usability heuristics were a priority in the development of UQ Scoop, as these were determined to be the most relevant for it's target audience.

4.1.1 Match between system and the real world

The overall design of UQ Scoop ensures that it uses language and concepts that the majority of the target demographic will already be familiar with. For example, drop down menus, primary and secondary fixed navigation bars. Therefore, it speaks the user's language with concepts that most users are familiar with. It is **unlikely** that a user will find difficulty navigating UQ Scoop.

4.1.2 User control and freedom

Given that a user may accidentally perform an action by mistake, the design of UQ Scoop that there are no 'traps'. That is, every page is flexible and does not lock the user into a particular page/segment. This is achieved with the fixed navigation bar at the bottom of the page, the bar always has a 'back-to-home' button, which may act as an 'emergency exit' for a user back to the homepage.

4.1.3 Recognition rather than recall

For returning user to the website, it is ideal to reduce the load on a user's memory by making navigation and elements easily visible and accessible. This heuristic was the primary reason behind the implementation of the fixed navigation bar. As it allows for experienced users to quickly jump from page to page to find the information that is most relevant to them.

4.1.4 Aesthetic and minimalist, consistent and flexible design

As an informational site, it is important to reduce clutter and irrelevant information. The design of UQ Scoop follows a very minimalist and responsive design. The primary goal of this site is inform a user, as such a minimalist design is key to focus only on the important details. The figure below shows the minimalist 'landmarks' page, which is a gallery page of places to see at UQ.

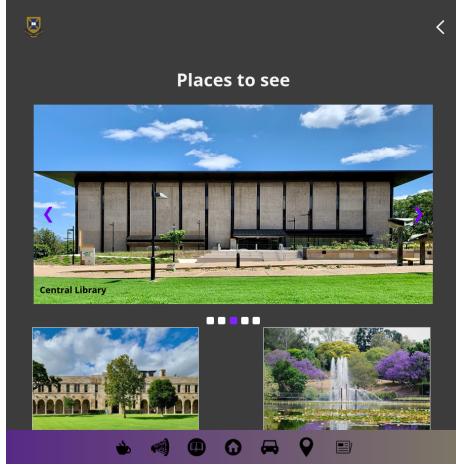


Figure 10: Minimal design example

Additionally, the flexibility of the site is ensured by creating a responsive design for accessibility across numerous devices, and by having multiple navigational options for to account for both new and experienced users.

4.2 Secondary Heuristics

The remaining 6 Nelson's heuristics were considered secondary to the scope of the website. That's is, given the scope of UQ Scoop, some of the heuristics were not particularly relevant. Such as, *visibility of system status*, the site does not implement queries or a back end system, thus, this was not a priority. Similarly, *error prevention* and *help users recognize, diagnose, and recover from errors*, as the UQ Scoop does not require user input and acts purely as an informational site, it is unlikely that a user may cause an error within the site.

5 Conclusions and Future Work

In summary, the current state of the UQ Scoop stands complete, and it **achieves the primary goals** set out by the design task. However, improvements could be made to make the experience even better. The following are key ares of interest for improvement.

- Responsiveness across a larger range of devices
- Accessibility options (appropriate scaling with zoom)
- Dark and Light theme for user preference.

Additionally, in it's current form, the UQ Scoop does not contain all the information that it should (for example, all the cafes/restaurants on campus). This is another major component that is to be worked on in the future.