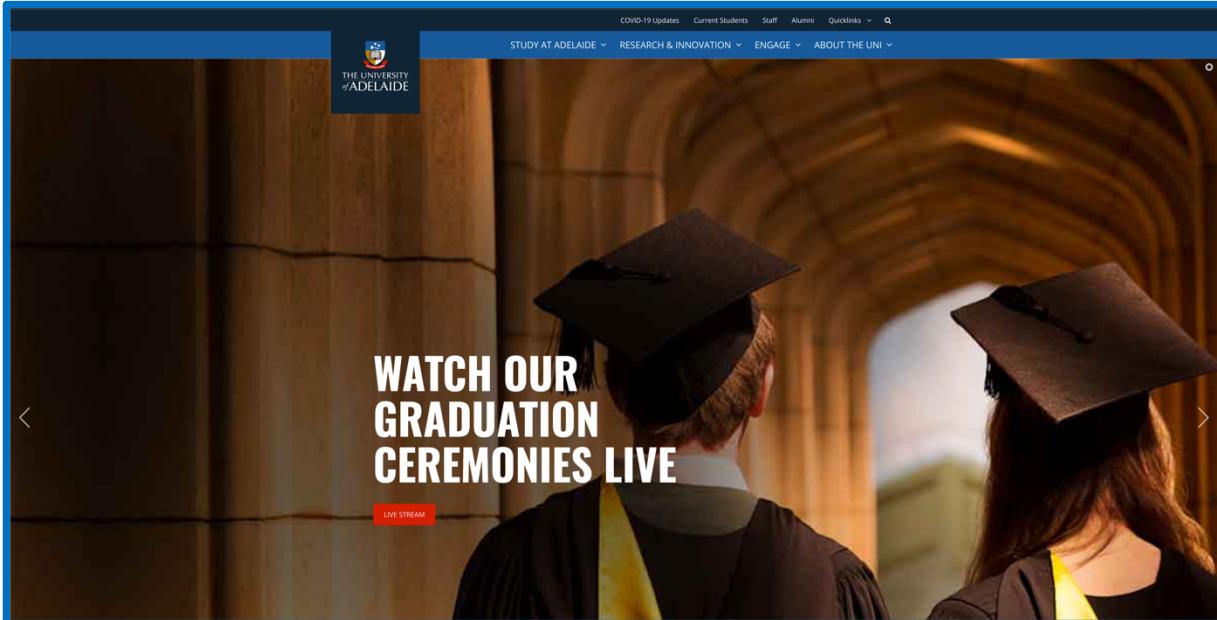


COVID-19 Tracing Web Application

Research

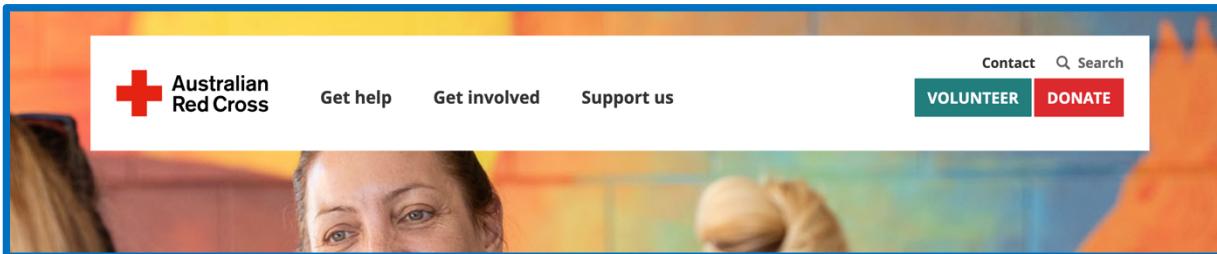
Interface design



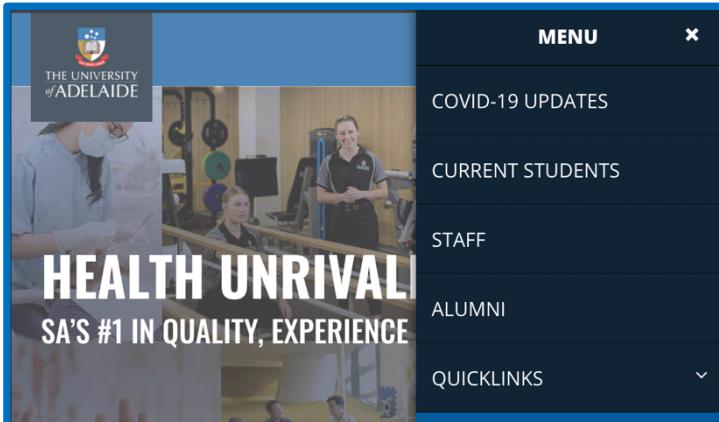
For our interface design of the webpage, the first design that attracted our attention was the website of the University of Adelaide (<https://www.adelaide.edu.au/>). This webpage mainly consists of four components a black fixed header, a heading menu, an image slider, and a Logo. This minimalist design and layout provide many functions while keeping the page look clean and concise. For the colour selection, a combination of dark midnight blue and cobalt blue provides a sense of rationality and authority to the user. Also, the larger image allows the user to focus more on the content than the logo when browsing the site, while the scrolling effect of the images conveys more information to the user at the same time. Therefore, we aim to implement this similar simplicity and practical interface design on our web pages and optimise it to be more relevant to the purpose of the COVID-19 tracing application.

Navigation

Navigation allows users to switch quickly from page to page, so a good design of the navigation bar is crucial for a webpage. There are 4 types of navigation are commonly used today, horizontal, vertical, mega drop-downs, and sticky/fixed.

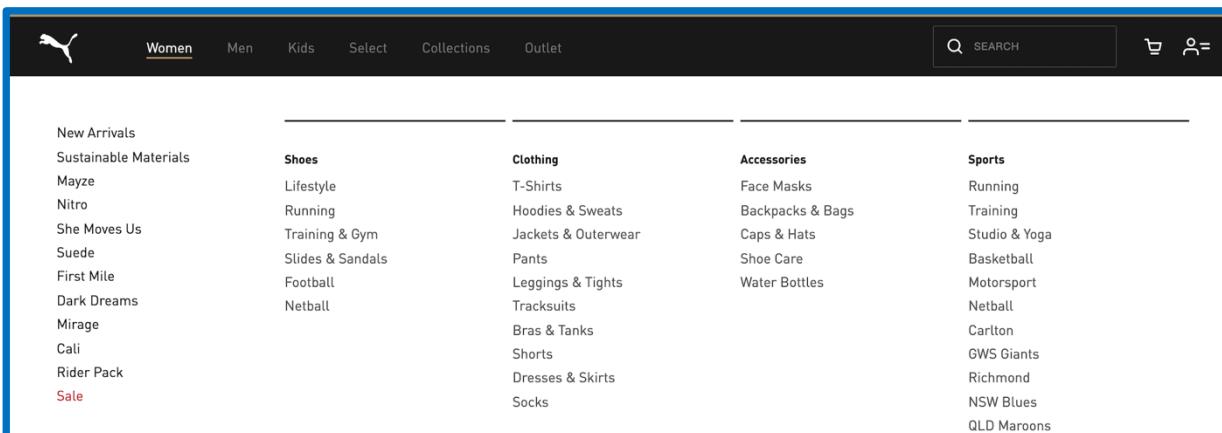


This horizontal navigation is from the Australian Red Cross(<https://www.redcross.org.au/>). This design ensures that the page is aesthetically pleasing while preventing the user from getting lost. However, it has the obvious disadvantage that the content of the navigation can go out of bounds as the page becomes smaller.



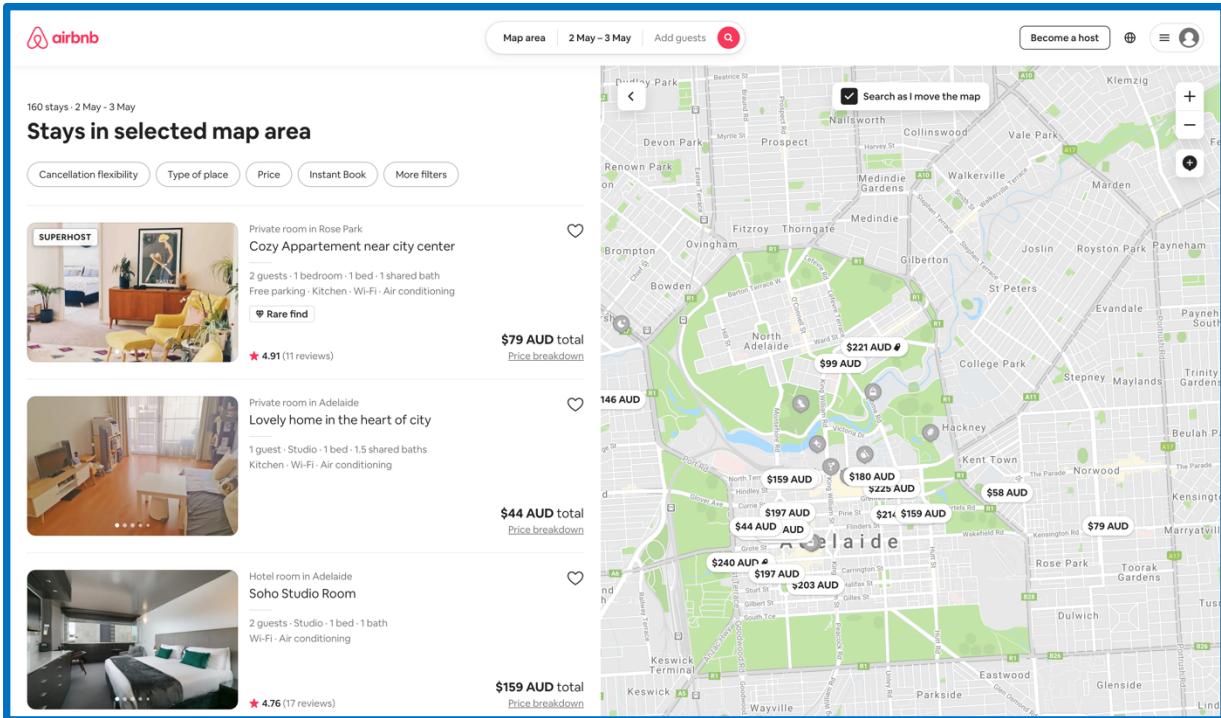
The vertical navigation usually placed on the side which allows the number of menu items is not constrained by the viewport width. However, at the same time it may take up other layout space, so most sites choose to hide the vertical menu, which results in it being better to work on a smaller screen device. This page is from the University of Adelaide, where the user needs to click a button to open the side navigation.

The main benefit of mega drop-down navigation is that it can display multiple options at once. Thus, the mega drop-down navigation (<https://au.puma.com/>) is ideal for e-commerce sites where the category lists are quite large and would not look great in a standard navigation menu. However, sometimes the mega drop-down navigation is considered to be annoying when the user has decided to click and then the drop-down navigation gives more options to the user.

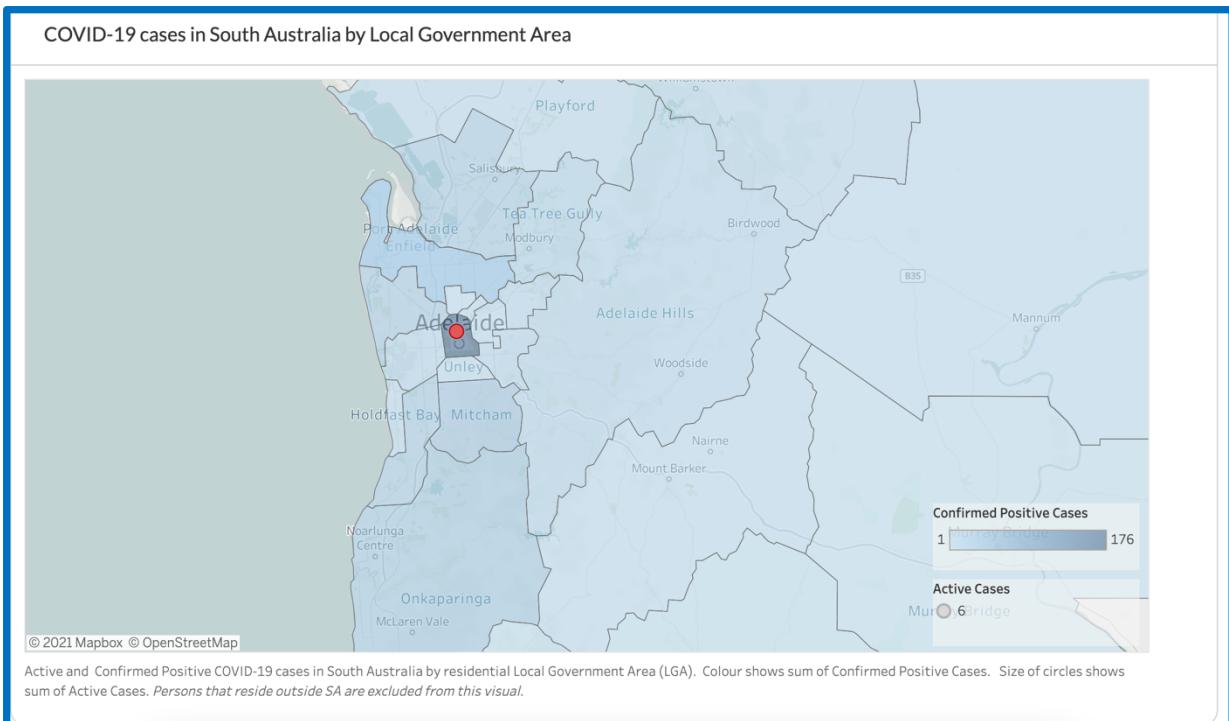


The last type of navigation is the fixed navigation, which is similar to the horizontal navigation, but it is fixed on the top of the page. Fixed navigation allows users to easily access the core functionalities of the website, regardless of where the user may be located in the page content. However, a potential disadvantage is considered to be that it may distract the user's attention. After comparing the advantages and disadvantages of those navigations, we decided to use horizontal navigation on the desktop and vertical navigation on the mobile, with the hamburger button hidden to reduce its impact on the display of the web content.

Tracing Map and Hotspots display.

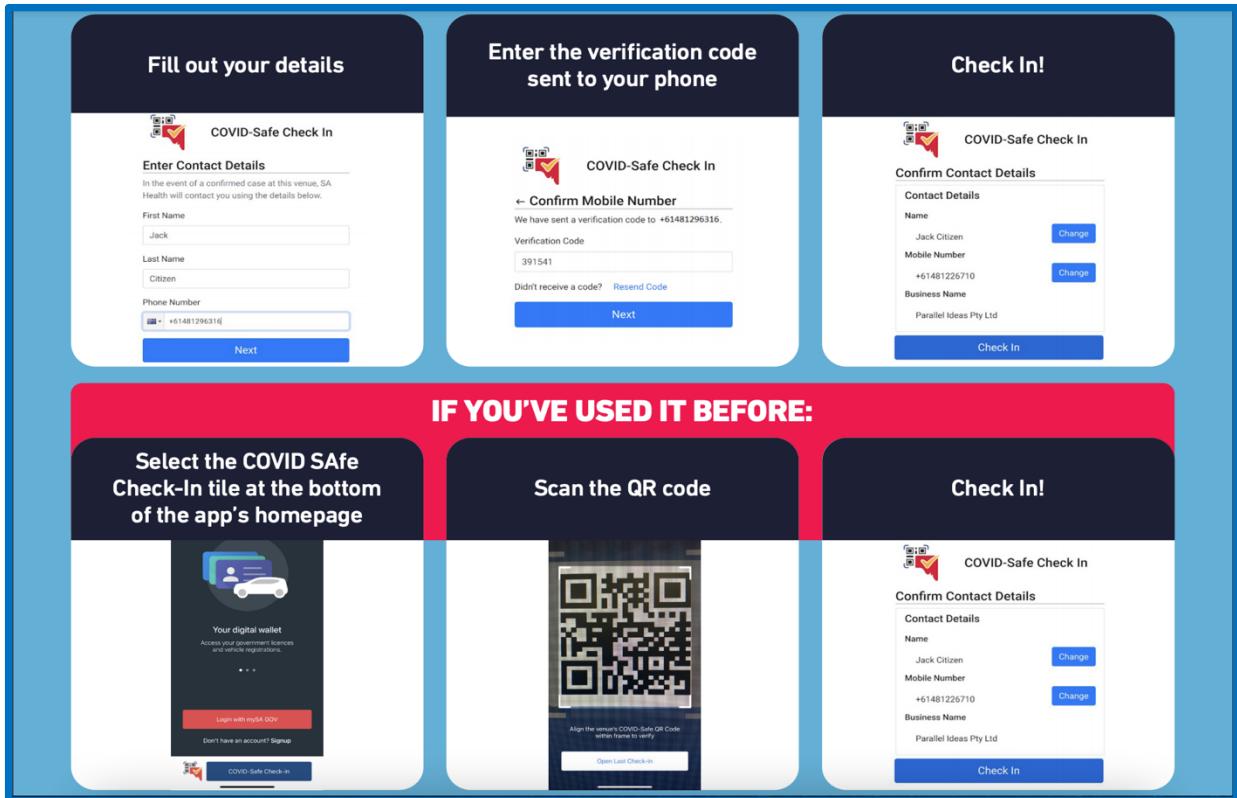


In terms of displaying the hotspots map, we refer to the Airbnb website (<https://www.airbnb.com.au>). The split-screen design as shown in the figure can well present two aspects of information to the user. In this case, Information such as the price of the room is displayed on the left, and information such as the location map of the room is allocated on the right. We realised that if we could implement this kind of layout in our project, it would greatly improve the utilisation of the content display. For this reason, we plan to fill the current hotspots and timeframe on the left-hand side and place the hotspots map on the right-hand side.



This hotspots map was found on <https://www.covid-19.sa.gov.au/home/dashboard/heatmap>, it provides us with ideas on how to display hotspots area on the map. The hotspots area is circled with eye-catching colours and the blue areas represent the number of confirmed positive cases,

and the darker the colour the more confirmed positive cases. We consider that showing confirmed positive cases in various regions is not our primary goal but could be a good stretch goal as it is a time-consuming task and may not be practical in our project.

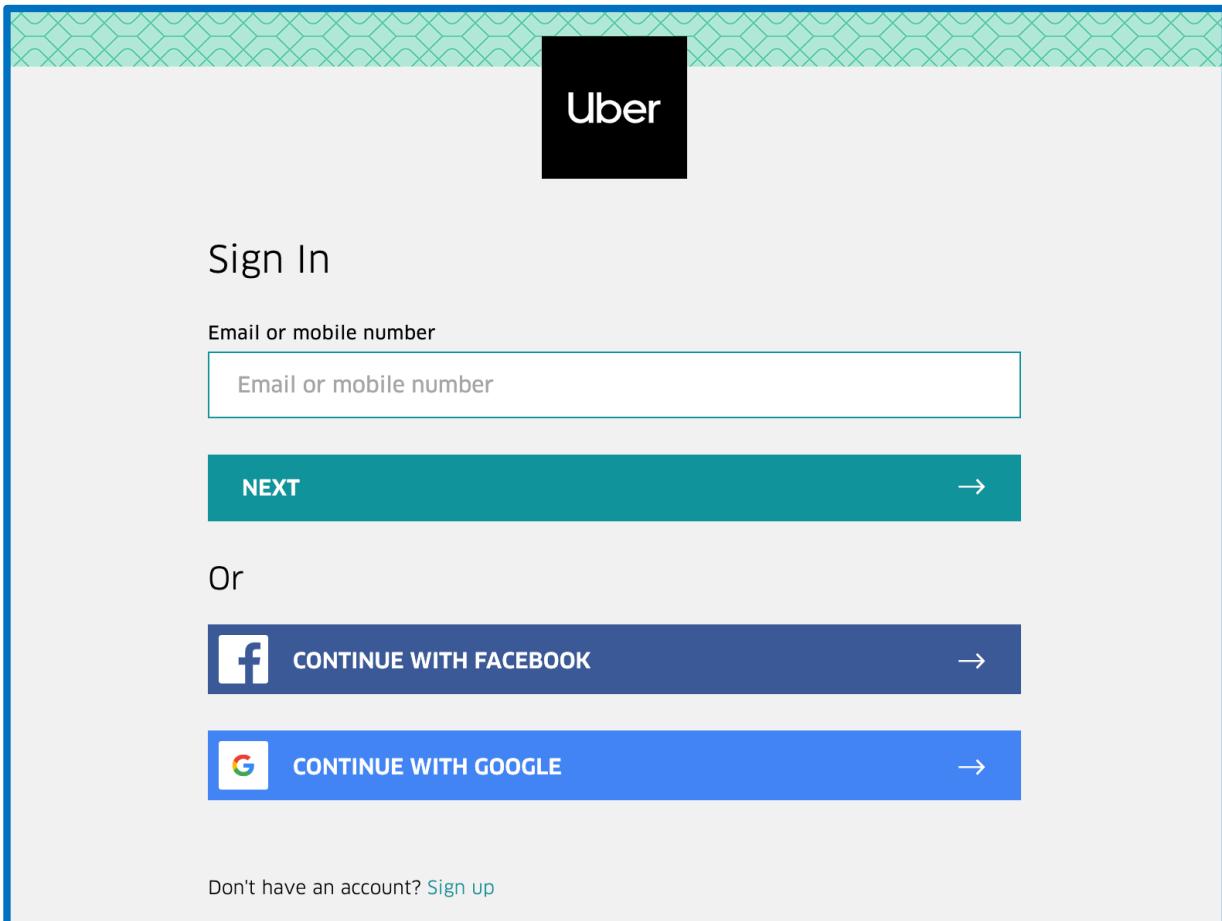


Check-in

This is the check-in procedure for the mySA GOV software (<https://www.sa.gov.au/mysagov>) which is officially used in South Australia. After the user fills in the name, phone number, the webpage will jump to another page for verifying the phone number, and the check-in can be done after the verification has completed. Moreover, the website also provides an auto-fill function that if you are not the first time using this app, your information will be auto-filled. Nevertheless, the auto-fill function often fails, which cause that the user has to repeat every step to complete the check-in.

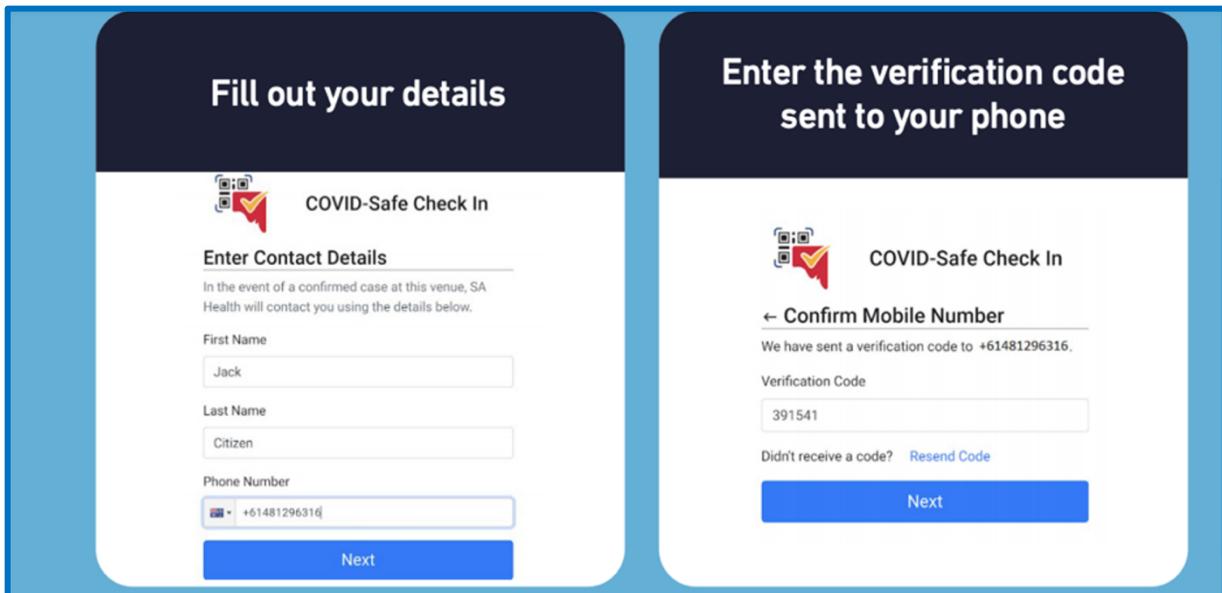
In order to solve this problem, we decided to use the search bar to complete the check-in process. This is an address search bar on the sahealth website (www.sahealth.sa.gov.au/). In our view, the check-in bar should be as simple as the search bar. After the user enters the check-in code, click the check-in button to save the visit record in the database. If the user has not logged in, a login page will be prompted and after then complete all steps for check-in. To make it more convenient for users to complete the login steps, the check-in bar should be placed on the centre position of the home page, so that the users can complete the check-in process in the shortest time.

Log in/Sign up



The image shows the Uber sign-in page. At the top center is the Uber logo. Below it, the word "Sign In" is displayed. A text input field labeled "Email or mobile number" contains the placeholder "Email or mobile number". Below the input field is a teal button with the word "NEXT" and a right-pointing arrow. Underneath this, the word "Or" is centered. There are two blue buttons: one for "CONTINUE WITH FACEBOOK" featuring the Facebook logo, and one for "CONTINUE WITH GOOGLE" featuring the Google logo. At the bottom left of the page, there is a link "Don't have an account? [Sign up](#)".

This page is from Uber(<https://auth.uber.com/login>). Like most login pages, this page is composed of three elements: Logo, login box, and third-party login. This minimalist design makes the purpose of the page clear, it allows users to quickly fill in and log in, while the third-party login provides another, more convenient way to help user to log in or sign up. The whole page presents a sense of modern simplicity without any visual interference. Therefore, it is our goal to implementing this kind of modern and clean interface while providing the necessary information and functions.

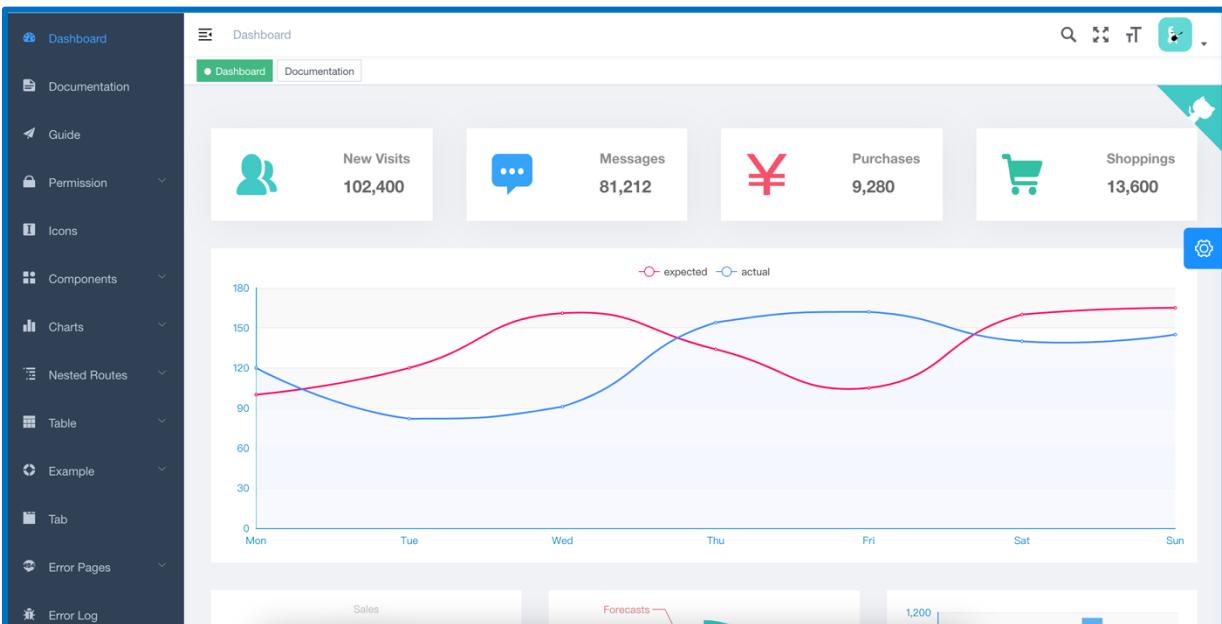


The image displays a two-step verification process. On the left, a dark blue card titled "Fill out your details" contains a COVID-Safe Check In icon, a section for "Enter Contact Details" (First Name: Jack, Last Name: Citizen), and a "Phone Number" field (+61481296316). A "Next" button is at the bottom. On the right, a dark blue card titled "Enter the verification code sent to your phone" contains a COVID-Safe Check In icon, a "← Confirm Mobile Number" section (Verification Code: 391541), and a "Resend Code" link. A "Next" button is also present at the bottom.

The image shows the Uber sign-up interface. It features a large black 'UBER' logo at the top. Below it, the heading 'Sign Up with Uber' is displayed. The form consists of several input fields: 'First name (required)' with a teal border, 'Last name (required)', 'Enter your phone number (required)' with a dropdown for country code ('+61') and a placeholder 'Phone number', 'Enter your email (required)' with a placeholder 'Email', and 'Enter a password (required)' with a placeholder 'Password'. A large teal 'SIGN UP' button is centered below the inputs. At the bottom, a small text box contains the terms and conditions: 'By clicking "Sign Up", you agree to Uber's [Terms of Use](#) and acknowledge you have read the [Privacy Policy](#). You also consent to receive calls or SMS messages, including by automated dialer, from Uber and its affiliates to the number you provide for informational and/or marketing purposes. Consent to receive marketing messages is not a condition to use Uber's services. You understand that you may opt out by texting "STOP" to 89203.'

For sign-up interface design, we have compared the sign-up interface of Uber and the mySA GOV app. In mySA GOV app, phone number and name are required to complete check-in, but both of them does not serve as a unique login ID. Thus, adding an email address not only solves this problem but also provide an alternative way to contact the user, information such as the health updates can be notified through email. For this reason, we have decided to design the sign-up page to be more in line with Uber, where users are required to provide their name, email, and phone number to complete the sign-up.

Interact with the check-in data



In terms of user interaction with check-in data, Element-admin(<https://panjiachen.github.io/vue-element-admin/#/documentation/index>) an open-source framework on GitHub, provides a good instance for us. This page has a simple layout yet contains various functions. The dashboard provides a general overview of check-in data, important notices, and statistics are placed on the page, which is a good way to alert health officials the recent changes in check-in data when they log in. The function bar on the left provided many practical functions that we can click from but

some of them are relatively complicated to implement. Due to this reason, we realise that fully implementing all the functions on this page would be a difficult challenge for us, so here we will modify them appropriately according to the needs of the project, such as removing unnecessary functions or adding functions such as edit personal profile and so on.

As shown in the figure below, for operating the check-in data, the add, delete, change and check of the database can be done here simply by using the click.

ID	Date	Title	Author	Importance	Readings	Status	Drag
1	1994-09-18 17:03	Heqealtwu Nznuokhd Dwx Pvoikpyq Hfmick Cfewhsby Wiswcb Ko wloea Thmmrott	Elizabeth	★★	2148	draft	+
2	1975-11-19 11:52	Wxttjrh Lcvrk Dfchb Ibnaqkxq Ecsw Bojs Ntswvjs	Timothy	★★	3730	draft	+
3	1981-05-25 14:59	Tffpa Hpqznb Lvqf Ihxsq Ukwurjljc Fulhq Axgkxo	Scott	★★	4646	published	+
4	2017-10-20 09:56	Dvdolodbr Budrthpy Zbnlhjxcjp Blsvpyj Qoxewljj Tvtztrblq Nghk	Timothy	★★★	3145	draft	+
5	1973-12-04 06:21	Wiwp Hrqvmnsj Yubpt Derner Itwmvzztl Czjwi Cktdtemz Mnbgnw ecv	Shirley	★	784	draft	+
6	1986-01-14 21:36	Thfxucilhh Sgpol Gth Lmrwb Cluwigje Brre Oeavu	Betty	★	859	draft	+
7	2018-10-30 11:04	Ednbkolr Krkt Fdldbrgs Vyubsgkte Qlygekt Tiqvrytequ Grtnn Sxexq	Helen	★★	1521	draft	+
8	1993-07-25 03:33	Kddlsizc Npd Rrsnqkmzi Ebpc Jwpbyqcr Gczmwz	Ronald	★★	2519	draft	+
9	1990-06-23 19:26	Jkkqbqda Qlsi Wngpxkko Ewddbzs Cfrafedutk Uzvax Uopmwtkk N ohzqnpueu	Jason	★	1446	published	+
10	1986-11-23 19:49	Kgmlwgdy Qdwbe Woxt Xeb Ygmslmle Winkkg lednkhe	John	★	2214	draft	+

In addition, we will also customize the page according to the user's authority, for example, ordinary users cannot access the check-in data, only their own check-in records and cannot be edited, to ensure the security of data.