



SWIMSAFE DESIGN DOCUMENT

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1.0 Introduction

Drowning is a major public health problem worldwide. It is the third leading cause of unintentional injury death worldwide, accounting for 7% of all injury-related deaths (World Health Organization, 2018). An estimated 360,000 people die every year around the world from drowning.

A case study done by Royal Life Saving Society Australia (Royal Life Saving Society Australia, 2018) shows that 249 people drowned in Australian waterways alone between 1 July 2017 and 30 June 2018. These statistics do show that there is a 14% reduction on 2016/17 statistics and an 11% reduction in deaths on the ten-year average.

SwimSafe is our attempt at providing a solution to this important global issue. At its core, SwimSafe is a mobile application for Android and iOS that utilizes augmented reality to give a visual representation and detailed description of potential dangers such as strong rip currents, shallow sandbars as well as other useful details such as high/low tide at Australian beaches.

2.0 Problem Statement

With the adoption of emerging technology, SwimSafe can help avoid drowning accidents and further educate people on the risks before entering the water.

In terms of competition, a similar app was developed by American advertising company Leo Burnett in partnership with Samsung known as Pocket Patrol. Though the idea bears similarities to our own, the application was limited by its execution and lacked certain functionality for it to be successful and gain widespread adoption. Firstly, their application was only available at two Queensland Beaches (Coolool Beach and Alexandra Headland) for a trial period of four weeks and no other progress was made. Secondly, it was developed and targeted for Android exclusively, thus limiting their potential user base in the trial period.

3.0 Target Audience

Australia's coastline stretches almost 50,000 kilometers and is linked by over 10,000 beaches, more than any other country in the world (Travellers Contact Point, n.d.). Due to this, the problem at hand affects many people from all walks of life and as such, we strive to deliver our services to as many of these individuals as possible. We also hope to partner with organizations such as Royal Life Saving Society Australia and Surf Life Saving Australia as well as receiving investment from government ran initiatives, expanding to beaches located in countries other than Australia in the future.

4.0 Goals

Our main aim with SwimSafe is to assist with teaching people how to identify hazards that would usually be difficult to spot without our application. Employing GPS technology to first identify the location of the user, the phone's camera can then be used to scan the waterline and will overlay a digital marker on the user's screen to flag a danger. Surf lifesavers and lifeguards will be capable of setting these markers with a description on the risks involved.

We understand that a potential drawback of our application is that of unmanned beaches and the lack of personnel able to set the markers as the dangers change throughout the year. In order to combat this, we're implementing alternative information on what to look out when visiting the beach as well as moderated user feedback with a form where people can report a hazard at their location.

5.0 Alpha Design

5.1 Structural Design

The information structure of SwimSafe is organized in a way that requires a minimal amount of gestures to be performed by the end user (taps, swipes) in order to perform tasks and view the content our application provides. When SwimSafe is opened, the user is first presented with a loading page for five seconds (*Figure 1.1*) before our home page is displayed. This start screen displays the view of the phone's camera right away, putting the main functionality of our application at the forefront (*Figure 1.2*). Additional pages such as Report Hazard (*Figure 1.4*) and FAQ (*Figure 1.5*) are all accessible with a collapsible side menu (*Figure 1.3*) that allows for simple navigation around our application.

Upon tapping any of the location markers, a popup window appears that details with the title and explanation of the respective danger. The examples used in our prototype are Rip Currents (*Figure 2.1*), High Tide (*Figure 2.2*) and Jellyfish (*Figure 2.3*).

5.2 Visual Design

SwimSafe adheres to the design languages and subsequent guidelines for iOS and Android provided by Apple and Google respectively. Utilizing relevant UI components and styles helps us to achieve a consistent visual aesthetic. Furthermore, following these standards helps us provide an excellent user experience throughout our application.

Our colour scheme primarily consists of a range of shades of blue to represent water and yellow to represent sand. These colours are applied to major elements such as the navigation menu and location markers. Additionally, blue is also used alongside grey, white and black for minor elements such as text and icons.

5.3 Prototypes

The team has chosen to use Figma as the tool of choice for SwimSafe's design phase. We have chosen Figma as it provides us with the necessary features and functionality for building our user interface as well as implementing interactions for prototyping purposes. In comparison to other design tools such as Sketch and Adobe XD, the biggest strength of Figma is the presence of live, real-time collaboration. As a team, we can simultaneously make changes to our design and view these changes instantly.

In prototyping SwimSafe and developing a working mockup, we can generate valuable feedback and identify changes that need to be made in order to help us meet the key product requirements for SwimSafe, leading to a better and more cost-efficient final product.

A live preview of the SwimSafe prototype is available here: <http://bit.ly/2HCKzL2>

6.0 References

Royal Life Saving Society Australia. (2018). *Royal Life Saving National Drowning Report 2018*. Sydney: Royal Life Saving Society – Australia 2018. Retrieved April 14, 2019, from https://www.royallifesaving.com.au/__data/assets/pdf_file/0004/23197/RLS_NDR2018_ReportLR.pdf

Surf Life Saving Australia. (2018, September 11). *National Coastal Safety Report 2018*. Retrieved April 14, 2019, from [issuu: https://issuu.com/surflifesavingaustralia/docs/ncsr-2018](https://issuu.com/surflifesavingaustralia/docs/ncsr-2018)

Travellers Contact Point. (n.d.). *Interesting Facts about Australia*. Retrieved May 05, 2019, from Travellers Contact Point: <https://www.travellers.com.au/plan-your-trip/australia-facts/>

World Health Organization. (2018, January 15). *Drowning*. Retrieved April 14, 2019, from World Health Organization: <https://www.who.int/news-room/fact-sheets/detail/drowning>

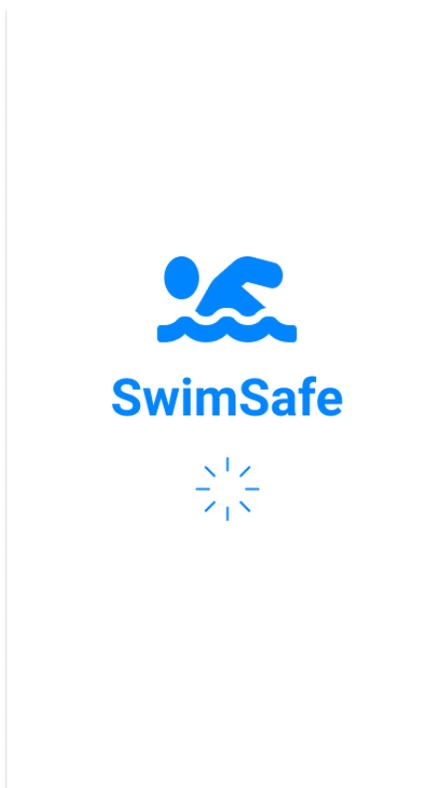


Figure 1.1



Figure 1.2



Figure 1.3




First Name

Last Name

Phone Number

Name of Beach

Description of hazard

State

Figure 1.4






FAQ

- 1. What is SwimSafe?**

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- 2. How long does it take for my hazard submission to go live?**

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- 3. How can I contact you?**

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Mauris augue neque gravida in fermentum. Molestie at elementum eu facilisis sed odio morbi quis.

Figure 1.5

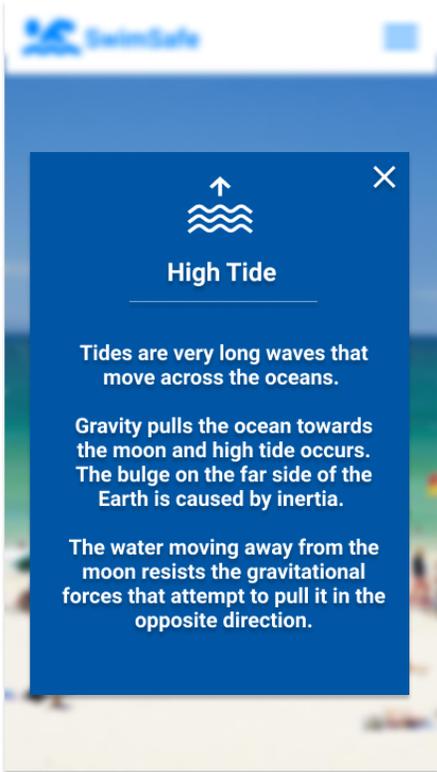


Figure 2.1

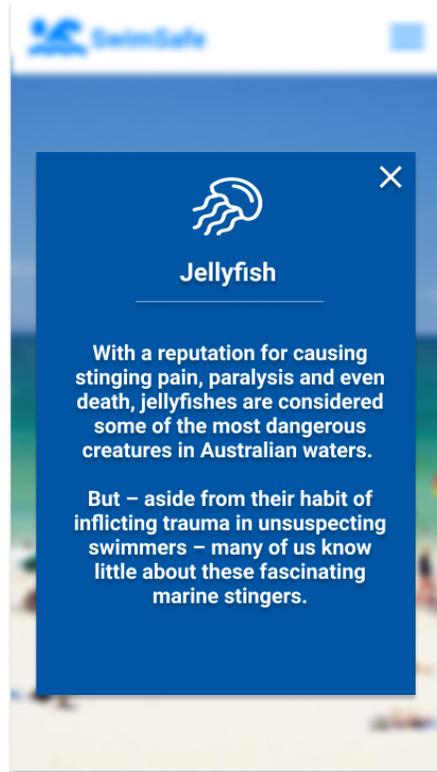


Figure 2.2

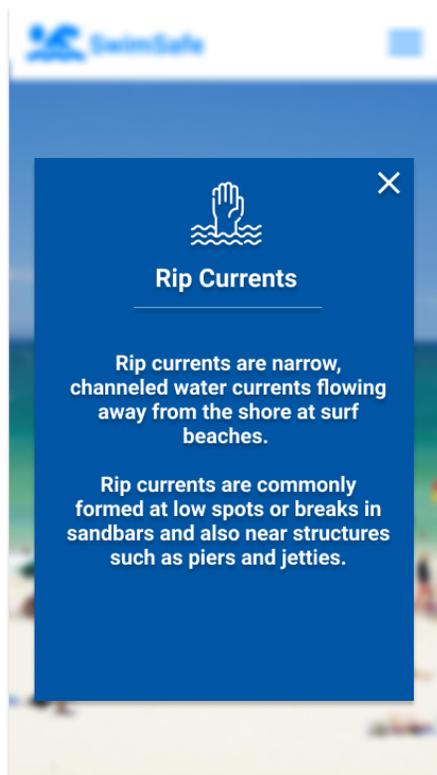


Figure 2.3