



Visit: <http://vicsafe.tk>

## MAINTENANCE DOCUMENT

### ABSTRACT

This document is for the perusal of future stakeholders tasked with the maintenance of VicSafe website as well as information on how to add additional features.

TA21- Lightning  
Coders

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## 1. Introduction

This maintenance document is aimed towards future developers of VicSafe who are tasked with keeping the product active as well as adding new key features as well as making changes to existing ones. The document describes in detail the product overview with key features, the security considerations, software, and hardware requirements, etc.

## 2. Product Overview

VicSafe is a website specifically designed for keeping international students aged 18-29 who are new to Victoria safe and helping them be aware of their rights and Victorian laws while providing them with a platform to get help in an easy and efficient manner.

Link to our website: <http://vicsafe.tk>

## 3. Project Reference List

The following links will lead to key references which were maintained throughout the ideation and build of the system.

- Iteration 1 google drive link: [https://drive.google.com/drive/folders/1oCdm1r3\\_PS\\_xYp4u-uytowl8-XC-a7mj?usp=sharing](https://drive.google.com/drive/folders/1oCdm1r3_PS_xYp4u-uytowl8-XC-a7mj?usp=sharing)
- Iteration 1 link: <http://vicsafeta21.tk>
- Iteration 2 google drive link: [https://drive.google.com/drive/folders/11o7oI9weh0zdSSjcXicSQ\\_oABGedQrzc?usp=sharing](https://drive.google.com/drive/folders/11o7oI9weh0zdSSjcXicSQ_oABGedQrzc?usp=sharing)
- Iteration 2 link: <http://vicsafe2.tk/>
- Iteration 3 link: <https://drive.google.com/drive/folders/1sTp5zmFVrBYREa0Z3Jk74Y-mSDFe39cD?usp=sharing>
- Iteration 3 link: <http://vicsafe.tk>
- Ideation: <https://drive.google.com/drive/folders/1UuBnKdKzsV4azg54Zff0YtEDzzoFQ0pZ?usp=sharing>
- Github: <https://github.com/Mack-zhou/TA21>

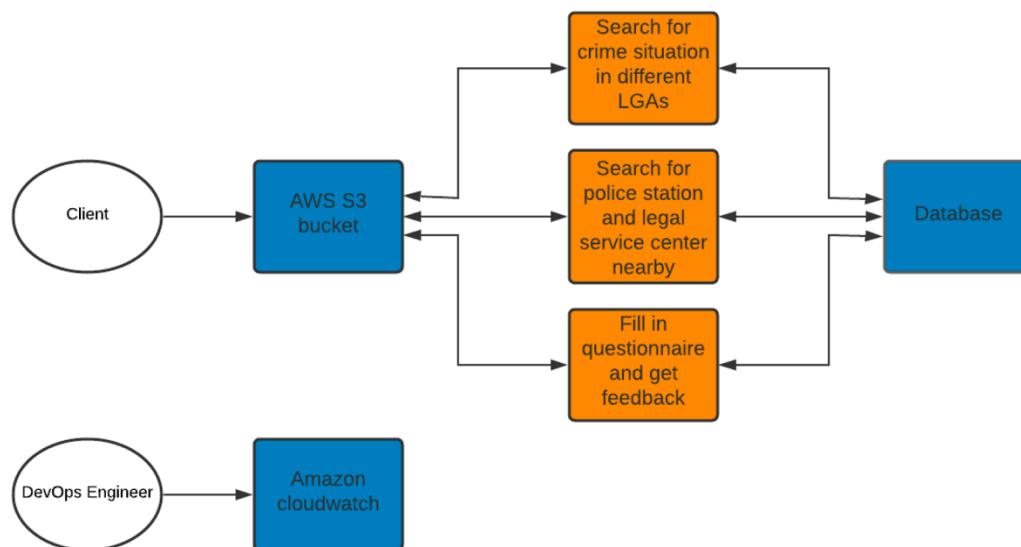
## 4. System Application Overview

The product, VicSafe is a website designed for international students in Victoria to access essential safety information and services. The product is an information system which uses map visualizations to present data including the safety ratings of different areas in Victoria (using historical crime data), the locations of closest safety services (using publicly available data) as well as multiple safety guides including summarized information as well as

quizzes/tests to determine the knowledge/fatigue level of users. The website is hosted on AWS and is developed using wordpress using different themes and plugins. R and RShiny are used for data handling and creating the visualizations, while a plugin WPQuiz is used to develop the quizzes.

Elementator is used to build the web pages and All-In-One-Migration is used to create back-ups of the website. In addition, GitHub is used for version control.

## 5. System Organization



The product VicSafe consists of a few major components:

- The backend – AWS used to host the website by creating an EC2 instance.
- Wordpress.org - To make changes to the design layout as well as the contents of the website, you'll need to log-in to the wordpress.org account for VicSafe since the website is powered by WordPress.org..
- Shinyapps.io - The visualizations in services and safety ratings pages are hosted on shinyapps.io and are both RShiny applications. These are then embedded into the web pages using <iframe> code.
- WPQuiz- The quizzes on the website namely the help quizzes and the fatigue measuring tool are built using the WPQuiz plugin available in wordpress and embedded in the webpages using shortcode.

## 6. System Core Functionalities.

The following are the core functionalities/features of the website:

## Safety Ratings

This page provides a choropleth map visualization of Victoria and shows the safety ratings of the different LGAs in Victoria based on historical crime data. This visualization is made using RShiny and includes options to search for specific locations to find its respective safety ratings. This is a useful tool for international students looking to reside in a safe area in Victoria. The visualization also provides a usability guide for ease of use for the users.

## Services

This page provides a RShiny map visualization of all the police stations and community legal centres located in Victoria and the option to filter and view by each of those options. It also includes options for the users to search for the closest services in their radius. This can be determined by either a user entered location or by choosing a university campus. Hovering and clicking on the location markers on the map provides additional information regarding the services as well as the fastest route to selected services from the user location.

## Guide Page

This page provides subsections regarding specific crime/safety scenarios, including and not limited to, sexual harassment, blackmail and racism. Upon selection, users are provided with information on how to identify if they have been a victim of the crime, when their rights are being violated as well as how to seek help.

## Help Quiz

A subsection of the guide page, this quiz aims to improve the users understanding of how to react to specific situations which threaten their safety. The quizzes provide results about your awareness of specific crime/safety scenarios and provide users with suggestions to improve their awareness and links to specific sections in the Guide page. The quizzes are built using the WPQuiz plugin and displayed using a shortcode.

## Road Safety

This page provides information on how to stay safe on the roads in Victoria as well as measures to prevent accidents. It educates users on the main traffic laws of Victoria.

## Fatigue Measuring Tool

A subsection of the Road Safety page, this tool is run as a quiz which the users can answer to get results on how safe it is for them to go out driving in their present condition. This quiz is built using the WPQuiz plugin and displayed on the website using a shortcode.

## Communities

This page provides users with contact information about getting in touch with their communities in Victoria. At present, this includes specifically Indian and Chinese communities in Victoria since data shows most international students come from these two countries as well as a general international student community section for the others.

## 7. Security Aspects

The following are the security aspects identified as having potential to occur as well as the conceptualized mitigation plans.

Security Aspect	Description	Mitigation Plan
Unauthorized entry	Unauthorized users could enter the website and create damage (malicious or otherwise)	A password is required for anyone trying to visit the website, it's helpful to protect the website from DDos attack. The administrator needs username and password to access the control panel of the website to edit the features of the website. The administrator also needs a private RSA key to ssh to the EC2 instance to change the configuration of the website.
Privacy Leak	Website could leak private information of users.	The website does not collect any user data, so it is not a concern that our website will leak any information.
Hosting Provider vulnerabilities	Hosting on an unreliable server can cause security issues.	The website is hosted on AWS, so no one can make changes to the website if they do not know the password for our AWS account and the private key to ssh into the certain EC2 instance.
Website Crash	Unforeseen events lead to crash of website and potential data loss.	Keep backups for each version of the website using backup plugins, in case that any crash happens, we can

		recover the website from the backup.
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## 8. Equipment Environment

### Computer Hardware

- Operating system:Centos 7 operating system
- Memory space: 8GB
- SSD storage: 20GB

### Server Side

- Cloud Computing: Amazon EC2
- Web Server: Apache

Our website can easily transfer between different host provider, the process is simple:

- Export the files of the old website to an USB using All-In-One-Migration.
- Build up a new wordpress application on the target machine.
- Using USB transfer the files to the new machine, import files to the wordpress application.
- Link the domain name with the IP address of the new host machine.

## 9. Support Software

Name	Link to Download	Description/Use
RStudio	<a href="https://www.rstudio.com/products/rstudio/">https://www.rstudio.com/products/rstudio/</a>	IDE for R and RShiny scripts. Used for data wrangling, analyzing and data visualization
Microsoft Excel	<a href="https://www.microsoft.com/en-au/microsoft-365/excel">https://www.microsoft.com/en-au/microsoft-365/excel</a>	For collecting and compiling data from different sources to csv format.
Putty	<a href="https://www.putty.org/">https://www.putty.org/</a>	SSH client
AWS Account	<a href="https://aws.amazon.com/console/">https://aws.amazon.com/console/</a>	Accessing and managing AWS cloud account
GitHub	<a href="https://github.com/">https://github.com/</a>	For version control
Freenom	<a href="https://www.freenom.com/en/index.html?lang=en">https://www.freenom.com/en/index.html?lang=en</a>	Obtaining free domain names
ShinyApps.io Cloud Hosting	<a href="https://www.shinyapps.io/">https://www.shinyapps.io/</a>	Lets you host Shiny applications online



Wordpress.org	<a href="https://wordpress.org/">https://wordpress.org/</a>	Open source software to create a website
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## 10. Database Characteristics

The code scripts for the data wrangling as well as the RShiny applications can be found at <https://github.com/Mack-zhou/TA21/tree/Iteration-3>. Additional details regarding the scripts are available in the attached readme file as well as the support document. The scripts are all well documented with comments for ease of maintenance.

The data sources being used for this product are described as follows:

Data Sources (Open Datasets)							
Names	Physical access	Frequency of source updates	Frequency of iteration system updates	Granularity	Copyright / licensing details	Type of Data	Attributes
Crime Incidents in Victoria <a href="https://www.crimestatistics.vic.gov.au/crime-statistics/latest-crime-data-by-area">https://www.crimestatistics.vic.gov.au/crime-statistics/latest-crime-data-by-area</a>	Available as csv	3 months	4 months	Aggregate number of crime incidents in Victoria by LGA	Creative commons <a href="http://creativecommons.org/licenses/by/3.0/">http://creativecommons.org/licenses/by/3.0/</a>	Tabular Data	Local Government Area (string), Police Region (string), Criminal incidents in 2012, 2013...2021 (int)
Open Streep Map <a href="https://api.openstreetmap.org/">https://api.openstreetmap.org/</a>	API	Daily	Fortnightly	Geospatial data whose granularity is as small as the size of the polygon	Open Data Commons Open Database License <a href="https://www.openstreetmap.org/copyright">https://www.openstreetmap.org/copyright</a>	Geospatial data using API	

Community Legal Centres in Victoria  <a href="https://clcs.org.au/sites/default/files/2021-03/Member%20org%20directory%20March%202021.pdf">https://clcs.org.au/sites/default/files/2021-03/Member%20org%20directory%20March%202021.pdf</a>	PDF	3 months	4 months	Directory of all community legal centres in Victoria	PDF published by the Community Legal Centres Australia	Text data	Name of Legal Centre, Telephone Number, Fax Number, Website, location, email-id, , Specialty Services
Police Stations in Victoria  <a href="https://www.police.vic.gov.au/location">https://www.police.vic.gov.au/location</a>	Online data	Not specified	4 months	Directory of all police stations in Victoria	© Copyright State Government of Victoria	Text Data	Opening Hours, Street Address, Suburb, State, Postcode, Phone, Fax, Email
Victorian Universities  <a href="https://universityreviews.com.au/list-of-universities/victoria/">https://universityreviews.com.au/list-of-universities/victoria/</a>	Online data	Not specified	4 months	List of all universities and campuses in Victoria		Tabular Data	University Name, Campus Location
Shapefile of Victoria  <a href="https://data.gov.au/dataset/ds-dga-bdf92691-c6fe-42b9-a0e2-a4cd716fa811/details?q=">https://data.gov.au/dataset/ds-dga-bdf92691-c6fe-42b9-a0e2-a4cd716fa811/details?q=</a>	Available online as shp file	Quarterly	4 months	Shapefile of administrative boundaries of Victoria	Creative Commons Attribution 4.0 International	Shape file data	IDs, Area, Polygon information

The cleaned datafiles and the R source files can be obtained at: <https://github.com/Mack-zhou/TA21/tree/Iteration-3>. Download as a zip file to make changes as required. Follow the readme (<https://github.com/Mack-zhou/TA21/tree/Iteration-3/IE#readme>) for further clarifications.

### For the Services:

Most of these data sources are static and need not be updated in the future and these include the data regarding Victorian universities, police stations, community legal centres and the shapefile. If there are any changes to the data regarding police stations, universities or community legal centres, they have to be manually changed in the corresponding csv files “police stations.csv”, “universities.csv” or “Community Legal Centres.csv”. Following this, the R files, “Geocode Police Stations.R”, “GeocodeUnis.R” and/or “GeocodeCLC.R” need to be run to reflect the changes.

The RShiny file, named “serviceapp.R” should be run following this and it should be published again to [www.shinyapps.io](http://www.shinyapps.io) which would require a ShinyApps account. Update the <iframe> code in the Services page accordingly.

### For the safety ratings:

With respect to the “Crime Incidents in Victoria” dataset, this needs to be manually updated every 3 months and it will be available at <https://www.crimestatistics.vic.gov.au/crime-statistics/latest-victorian-crime-data/download-data> under the naming format “Data Tables LGA Criminal Incidents Year Ending June 2021 (XLSX, 17.33 MB)” [Replace June 2021 with the latest update].

This dataset will then need to be cleaned and used for updating the safety ratings. This can be done by making use of the following source file:

[https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Safety\\_Rent\\_Wrangling.R](https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Safety_Rent_Wrangling.R) (or open Safety\_Rent\_Wrangling.R from the downloaded zip file.)

Open the file using RStudio (or a viable alternative), and make the following changes:

Change the file name being read to the latest version and run the entire code to finish cleaning and to obtain an updated version of the cleaned dataset for use in the RShiny Application.

The RShiny file, named “safemap.R” should be run following this and it should be published again to [www.shinyapps.io](http://www.shinyapps.io) which would require a ShinyApps account. Update the <iframe> code in the Safety Rating page accordingly.

## 11. Future Maintenance

### How to set up the Website/System in the future

#### Create EC2 instance and Elastic ip address

- Create instance through EC2 dashboard in AWS, configure the instance type and security group et al.
- Create Elastic IP address and associate it with the EC2 instance

Instance ID i-0f2b5985b6d6ed3a9	Public IPv4 address 3.143.114.238   <a href="#">open address</a>
IPv6 address –	Instance state Running
Private IPv4 DNS ip-172-31-44-212.us-east-2.compute.internal	Instance type t2.micro
VPC ID vpc-428ae429	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.
Subnet ID subnet-1d221551	

### EC2 instance details

3.143.114.238

Actions

Associate Elastic IP address

Summary

Allocated IPv4 address 3.143.114.238	Type Public IP	Allocation ID eipalloc-016a2b75d87b9f2d7	Reverse DNS record –
Association ID eipassoc-0eb2b6c141a0d3202	Scope VPC	Associated instance ID i-0f2b5985b6d6ed3a9	Private IP address 172.31.44.212
Network interface ID eni-03b0b2c3bd3e5449b	Network interface owner account ID 554852827014	Public DNS ec2-3-143-114-238.us-east-2.compute.amazonaws.com	NAT Gateway ID –
Address pool Amazon			

### Elastic ip details

Link the Elastic IP address with domain name

- Create a domain name using [www.freenom.com](http://www.freenom.com)
- Set the DNS target as the elastic IP address

My Domains					
View & manage all the domains you have registered with us from here...					
Enter Domain to Find				Filter	
Domain	Registration Date	Expiry date	Status	Type	
vicsafe.tk	2021-10-04	2022-01-04	ACTIVE	Free	Manage Domain
vicsafe2.tk	2021-09-03	2022-07-03	ACTIVE	Free	Manage Domain
vicsafeta21.tk	2021-08-26	2022-02-26	ACTIVE	Free	Manage Domain

Results Per Page: 10 3 Records Found, Page 1 of 1

## Domain name setting

### WordPress website set up

- Please refer to the official tutorial from AWS below:  
<https://docs.aws.amazon.com/codedeploy/latest/userguide/tutorials-wordpress.htm>

### Adding new web pages to the website

- In the WordPress dashboard, find the pages menu in the navigation menu, and then click add new.

### Editing contents of a web page

- When you want to edit the content of the page, there are two ways that can be used: One is to find the Post menu directly in the WordPress dashboard and then edit it. The other is to edit the content using the Elementator plugin.
- You can add media or text in different blocks.
- In addition, no matter what content you want to add, such as pictures, text messages or buttons, just select the corresponding widget in the menu bar on the left of the Elementor and drag it directly to the block.

### Changing the theme

- For making changes to the theme of the website, go to Customize in Appearance in the WordPress dashboard, and then click Theme.
- Here you can find many different types of themes
- Click Add new
- Find the appropriate theme, click Install
- Then click Activate to complete the theme replacement.

### Adding new topics to the Guide Page

- After clicking Edit Page (it being the Guide page), use the Elementor plugin and scroll down to the bottom of the page.

- You can see the 'Edit section' at the top of the section
- Right-click to select Copy, then place the mouse in 'drag widget here'
- Right-click to select Paste, so as to ensure that the new block is consistent with the previous blocks.
- The content in each column can be changed by clicking them, including pictures and text.

#### Adding new communities to the Communities Page

- After clicking Edit Page (it being the Communities page), use the Elementor plugin.
- Click Copy in the section of the community, and then paste it in the 'drag widget here' position.
- Click different contents in the column to modify or update.

#### Changing the UI Design

- In terms of UI, if you want more different design ideas, we recommend doing more research to find some different design ideas, which can also make the website have more features and be special. For example, the use of different fonts and sizes of heading and body in text information can enhance the sense of hierarchy and enable users to capture important information faster.
- In order to better understand the interface design and how to make the design more standardized, you can learn more about the design theory and guidelines, such as Don Norman, 2013, the design of everyday things. And some other references as well.

#### Adding new quizzes to the Help Quiz Page

- Go to the WP Quiz plugin in the Wordpress dashboard.
- Click on Import/Export. Choose the type of quiz you want to add. Trivia Quiz is a regular quiz type with straightforward right and wrong answers that displays if you have chosen the right or wrong answer after every question. Personality quiz template allows you to create quizzes where there is "no wrong answer" and lets you allocate different scores for each choice.
- After importing, go to All Quizzes. Select the quiz you just imported and then select edit.
- Change the contents of the quiz as required.
- Publish the quiz and copy the shortcode.
- Go to the Help Quiz page on the website and edit using Elementator.
- Click on edit tabs
- Add a new tab item and edit the contents as required.
- Include the short code within the content to embed the quiz.

## Making changes to the Safety Ratings Map

Changes to the safety ratings map can be made with respect to updating to the latest available dataset and changing the danger ratings for different crimes or changing the layout.

### Updating Safety Ratings Map Data

- Download the latest dataset from <https://www.crimestatistics.vic.gov.au/crime-statistics/latest-victorian-crime-data/download-data>. The required dataset follows the naming format “Data Tables LGA Criminal Incidents Year Ending June 2021 (XLSX, 17.33 MB)” [Replace June 2021 with the latest update].
- This dataset will then need to be cleaned and used for updating the safety ratings.
- This can be done by making use of the following source file:  
[https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Safety\\_Rent\\_Wrangling.R](https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Safety_Rent_Wrangling.R)
- Open the file using RStudio (or a viable alternative).
- Change the name of the csv file being read to the downloaded file name within the R source code and run the entire code to finish cleaning and to obtain an updated version of the cleaned dataset for use in the RShiny Application.
- Download the RShiny file from <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/safemap.R>
- Run the RShiny file to ensure it is working properly and then save and publish it.
- Publishing would require you to create an account on [www.shinyapps.io](http://www.shinyapps.io)
- After the application is deployed, visit your shinyapps dashboard by signing in using your credentials.
- Ensure the deployed application has been hosted and is running.
- Copy the link for the RShiny Application.
- Open the Safety Ratings webpage on the VicSafe website.
- Edit using Elementator. Select the section where the map appears and choose the Text Editor option.
- Replace the link within the <iframe> code with the copied link and update the page.

### Updating Safety Ratings Map Danger Ratings for different crimes

- Download the dataset [https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Data\\_Tables\\_LGA\\_Criminal\\_Incidents\\_Year\\_Ending\\_March\\_2021.xlsx](https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Data_Tables_LGA_Criminal_Incidents_Year_Ending_March_2021.xlsx) or Download the latest dataset from <https://www.crimestatistics.vic.gov.au/crime-statistics/latest-victorian-crime-data/download-data>. The required dataset follows the naming format “Data Tables LGA Criminal Incidents Year Ending June 2021 (XLSX, 17.33 MB)” [Replace June 2021 with the latest update].
- Download the R source code from [https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Safety\\_Rent\\_Wrangling.R](https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Safety_Rent_Wrangling.R)
- Update the values given to each of the offences to change the danger ratings
- Update the values given to each of the locations to change the danger ratings
- Update the formula for the cumulative danger rating if required to change the overall danger ratings.
- Update the values/safety ratings given across the distribution of danger ratings if required.

- Change the name of the csv file being read to the downloaded file name within the R source code(if there is a change) and run the entire code to finish cleaning and to obtain an updated version of the cleaned dataset for use in the RShiny Application.
- Download the RShiny file from <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/safemap.R>
- Run the RShiny file to ensure it is working properly and then save and publish it.
- Publishing would require you to create an account on [www.shinyapps.io](http://www.shinyapps.io)
- After the application is deployed, visit your shinyapps dashboard by signing in using your credentials.
- Ensure the deployed application has been hosted and is running.
- Copy the link for the RShiny Application.
- Open the Safety Ratings webpage on the VicSafe website.
- Edit using Elementator. Select the section where the map appears and choose the Text Editor option.
- Replace the link within the <iframe> code with the copied link and update the page.

#### Updating the layout of the Safety Ratings Map

- Download the RShiny file from <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/safemap.R>
- Make changes as required on the UI side
- Run the RShiny file to ensure it is working properly and then save and publish it.
- Publishing would require you to create an account on [www.shinyapps.io](http://www.shinyapps.io)
- After the application is deployed, visit your shinyapps dashboard by signing in using your credentials.
- Ensure the deployed application has been hosted and is running.
- Copy the link for the RShiny Application.
- Open the Safety Ratings webpage on the VicSafe website.
- Edit using Elementator. Select the section where the map appears and choose the Text Editor option.
- Replace the link within the <iframe> code with the copied link and update the page.

#### Making changes to the services map

Changes to the services map can be made with respect to updating the information for different police stations or legal centres in Victoria or changing the layout.

#### Updating the data regarding police stations/community legal centres/universities

- Download the required dataset:  
Police Stations: <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/police%20stations.csv>  
Community Legal Centres: <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Community%20Legal%20Centres.csv>  
Universities: <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/Universities.csv>
- Make the necessary changes to the CSV files as required. The information regarding the relevant data sources can be found in the table in the Database Characteristics section.
- Download the relevant R source files for wrangling:



Police Stations: <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/GeocodePoliceStations.R>

Community Legal Centres: <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/GeocodeCLC.R>

Universities: <https://github.com/Mack-zhou/TA21/blob/Iteration-3/IE/GeocodeUnis.R>

- Run the relevant R files.
- Download the RShiny file for the services map from <https://github.com/Mack-zhou/TA21/blob/main/IE/serviceapp.R>
- Run the RShiny file to ensure it is working properly and then save and publish it.
- Publishing would require you to create an account on [www.shinyapps.io](http://www.shinyapps.io)
- After the application is deployed, visit your shinyapps dashboard by signing in using your credentials.
- Ensure the deployed application has been hosted and is running.
- Copy the link for the RShiny Application.
- Open the Services webpage on the VicSafe website.
- Edit using Elementator. Select the section where the map appears and choose the Text Editor option.
- Replace the link within the <iframe> code with the copied link and update the page.

#### Updating the layout of the Services Map

- Download the RShiny file for the services map from <https://github.com/Mack-zhou/TA21/blob/main/IE/serviceapp.R>
- Make changes as required on the UI side
- Run the RShiny file to ensure it is working properly and then save and publish it.
- Publishing would require you to create an account on [www.shinyapps.io](http://www.shinyapps.io)
- After the application is deployed, visit your shinyapps dashboard by signing in using your credentials.
- Ensure the deployed application has been hosted and is running.
- Copy the link for the RShiny Application.
- Open the Services webpage on the VicSafe website.
- Edit using Elementator. Select the section where the map appears and choose the Text Editor option.
- Replace the link within the <iframe> code with the copied link and update the page.

## 12. Error Conditions

### 504 Gateway Timeout error

This error may occur if there is a crash in the database, in this case, you need to log in into the AWS console and reboot the corresponding RDS database.

### This site can't be reached error

This error may occur when there is a misconfiguration in the DNS setting, the fast way to solve this error is rebuild an EC2 instance and import the latest backup of the website.

## 12. Testing

### Functional Testing

#### **Integrity (Acceptance Testing):**

The safety ratings map should be able to display the correct location and rating when the user input suburb name, postcode or address.

**Result:** Pass

The services map should be able to filter services based on user selection and show closest services based on entered location.

**Result:** Pass

The help quizzes should provide results and recommendations based on the answers provided by the users.

**Result:** Pass

#### **Functionality Test:**

The website functionality, such as page navigation, buttons and content display, all work properly.

**Result:** Pass

### Non functional testing

#### **Compatibility Test:**

The website functions as expected across different screens and devices.

**Result:** Some content does not display in a user-friendly manner on a small screen(mobile phone device) in portrait mode.

#### **Website Stress Test:**

The map works as expected when up to 5 users are using them at the same time.

**Result:** Pass

#### **Backup and Recovery Testing:**

The website can be backed up, and the backup can be recovered to build up a new website that is the same as the old one.

**Result:** Pass

**Other testing results as based on GTMetrix.com**

<b>First Contentful Paint</b> How quickly content like text or images are painted onto your page. A good user experience is 0.9s or less.	Longer than recommended <b>1.3s</b>	<b>Time to Interactive</b> How long it takes for your page to become fully interactive. A good user experience is 2.5s or less.	Good - Nothing to do here <b>1.3s</b>
<b>Speed Index</b> How quickly the contents of your page are visibly populated. A good user experience is 1.3s or less.	OK, but consider improvement <b>1.3s</b>	<b>Total Blocking Time</b> How much time is blocked by scripts during your page loading process. A good user experience is 150ms or less.	Good - Nothing to do here <b>0ms</b>
<b>Largest Contentful Paint</b> How long it takes for the largest element of content (e.g. a hero image) to be painted on your page. A good user experience is 1.2s or less.	OK, but consider improvement <b>1.3s</b>	<b>Cumulative Layout Shift</b> How much your page's layout shifts as it loads. A good user experience is a score of 0.1 or less.	Good - Nothing to do here <b>0</b>