



MAINTENANCE DOCUMENTATION

Topic: Construction Disruption

Expected Audience

*Department of Health and Human Service,
Disability Services Australia*

Version No. 1

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Presented by Pro-Planners (TP101)

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1. INTRODUCTION

This report is a maintenance documentation written by the Pro-planners (TP101) team for the purpose of maintaining the Fair Journey website application system. This documentation provides the information that maintenance personnel need to effectively maintain the fair journey web application system. The documentation defines the software support environment, the roles and responsibilities of maintenance personnel, and regular activities that are essential to supporting and maintaining program modules, workflow and database structures.

The Fair journey web application system is dedicated to helping the disability with mobility issues to avoid the inconvenience caused by construction during their travels in Melbourne CBD. This maintenance documentation provides the necessary information to maintain the system efficiently. This documentation elucidates all measures required in order to ensure and maintain the functional capability of the system. It also explains the fair journey web application system needs any further improvement by adding new features.

1.1. Purpose

The purpose of this maintenance documentation is to provide information about the Fair Journey web application system to maintenance personnel or further software developers to help them maintain and quickly understand the system more efficiently.

1.2. Project Reference

The Fair Journey web application system was developed using Agile software development lifecycle and delivered by three iterations from August 30, 2018, to October 2, 2018, and the final version published on October 9, 2018.

In the first iteration of lifecycle due August 18, 2018, the functions below are delivered.

- Finding road construction information in Melbourne CBD
- Finding road surface information in Melbourne CBD
- Planning alternative routes in Melbourne CBD

In the second iteration of lifecycle due September 18, 2018, the functions below are delivered.

- Finding pedestrian volume in Melbourne CBD
- Finding my location in Melbourne CBD
- Finding wheelchair accessible public toilet in Melbourne CBD

In the third iteration of lifecycle due October 4, 2018, the functions below are delivered.

- Generating the output in pdf format
- Finding railway stations with lifts in Melbourne CBD
- Finding weather information in Melbourne CBD
- Finding 2019 events in Melbourne CBD




Iteration	Function	Priority	Date
1	 <ul style="list-style-type: none"> • Road Construction Information 	High	30/08/2018
	<ul style="list-style-type: none"> • Road Surface Information 	Out of scope	
	<ul style="list-style-type: none"> • Planning Alternative Routes 	High	
2	 <ul style="list-style-type: none"> • Pedestrian Volume 	High	18/09/2018
	<ul style="list-style-type: none"> • My Location – Nearest disruption 	Medium	
	<ul style="list-style-type: none"> • Accessible Public Toilets 	Low	
3	 <ul style="list-style-type: none"> • Generating the outputs in '.pdf' format 	High	02/10/2018
	<ul style="list-style-type: none"> • Elevator Information 	High	
	<ul style="list-style-type: none"> • Educational Articles 	Medium	
	<ul style="list-style-type: none"> • Weather Information 	Low	
	<ul style="list-style-type: none"> • Events in Melbourne CBD 	Low	

Figure 1: List of Functionalities

1.3. Glossary

Table 1. Glossary of the report

GeoJSON	a format for encoding a variety of geographic data structures.
SQLite	a self-contained, high-reliability, embedded, full-featured, public- domain, SQL database engine.
Open source	denoting software for which the original source code is made freely available and may be redistributed and modified.
API	a set of functions and procedures that allow the creation of applications which access the features or data of an operating system, application, or other services.

CSV	a simple file format used to store tabular data, such as a spreadsheet or database.
PDF	a file format for capturing and sending electronic documents in exactly the intended format.
HTTP	Stands for "Hypertext Transfer Protocol." It is the protocol used to transfer data over the web.
HTTPS	Stands for "Hypertext Transfer Protocol Secure". It is the protocol where encrypted HTTP data is transferred over a secure connection.
SSL	a standard security technology for establishing an encrypted link between a server and a client
DEBUG	the process of identifying and removing errors from computer hardware or software.
404-error message	the webpage you were trying to reach could not be found on the server.
CSS	a style sheet language used for describing the presentation semantics of a document written in a markup language
jQuery	a concise and fast JavaScript library that can be used to simplify event handling, HTML document traversing, Ajax interactions and animation for speedy website development.
Python	an interpreted, object-oriented programming language similar to PERL, that has gained popularity because of its clear syntax and readability.
Django	a high-level Python Web framework that encourages rapid development and clean, pragmatic design.
JavaScript	an object-oriented computer programming language commonly used to create interactive effects within web browsers.
HTML	a text-based approach to describing how content contained within an HTML file is structured.

2. SYSTEM DESCRIPTION

2.1. System Application

The Fair journey web application system is dedicated to helping the disability with mobility issues to avoid the inconvenience caused by construction during their travels in Melbourne CBD. The main idea of this project is to identify the locations experiencing construction disruptions due to the construction of buildings, revamp of buildings and roads, obstructed roadways and footpaths due to these construction activities. Melbourne city has ongoing development of roads, railways, buildings and more. Hence there is disruptions majority of the time in various locations around the city. The website displays wheelchair accessible public toilets and railway stations with lifts across the Melbourne CBD, especially near places where the user plans his journey. It is going to be significantly useful for our target users as it has several features to help them

understand the events in CBD, weather information on days the journey is planned on the website.



Figure 2. Main Functions of the Website

The web application use GeoJSON file to maintain the data because all data are loaded in the Mapbox package, which need special file type to process and present geological information. The road project dataset can be updated hourly through the VicRoads API and are processed into GeoJSON file by a script. Other datasets need to be updated manually. On the other hand, the Django framework contains the SQLite database, which can be used to store previous datasets.

This web application uses the below datasets:

- Melbourne Data – Road Segments with Surface Type
- Melbourne Data – Set for Street Names
- VicRoads – Transport Open Data API
- Melbourne Data – Pedestrian Volume Data
- Melbourne Data – Wheelchair Accessible Public Toilets
- Melbourne Data – Lifts in Train Stations
- Melbourne Data – 2019 Events
- Weatherfor.us – Weather API
- Mapbox – Map API

The reports are available in different formats like .csv and API formats. These data are updated in several frequency conditions such as hourly, daily, weekly and few of them monthly too. The project is using most updated data. For maintaining purpose, the maintenance personnel ensure to need regular updates to provide the right information at the right time.

2.2 System Organization

This document provides a brief description of the system architecture diagram and various diagrams of the web application system's major system components.

2.2.1. System Architecture

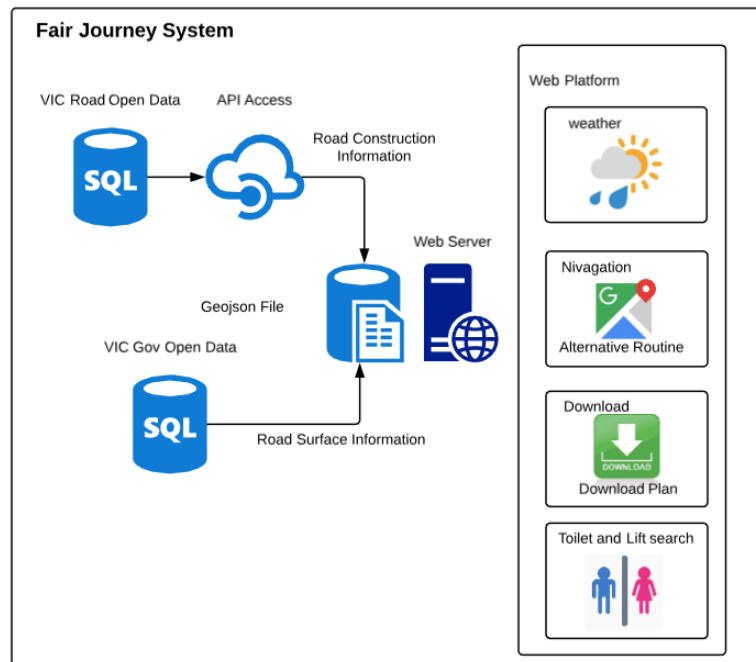


Figure 3: The System Architecture of the Project

2.2.2. Initial Class Diagram

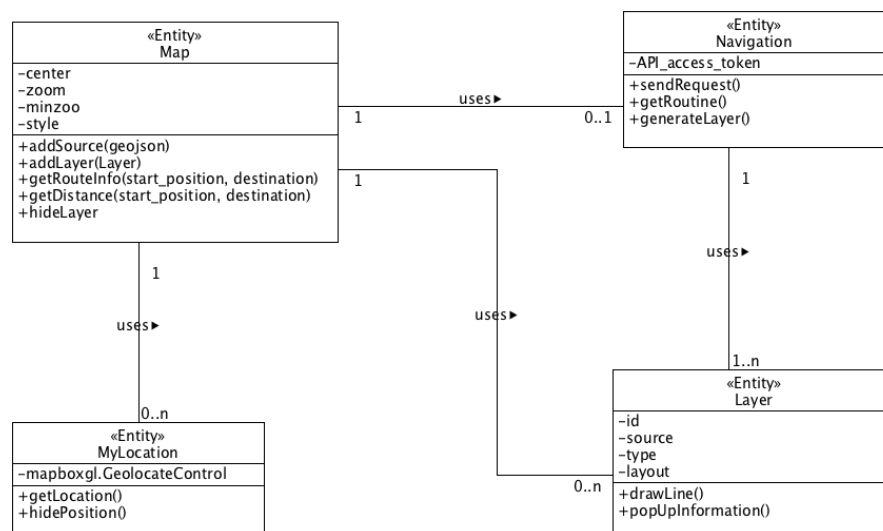


Figure 4. Initial Class Diagram of the website

2.2.3. Sequence Diagram

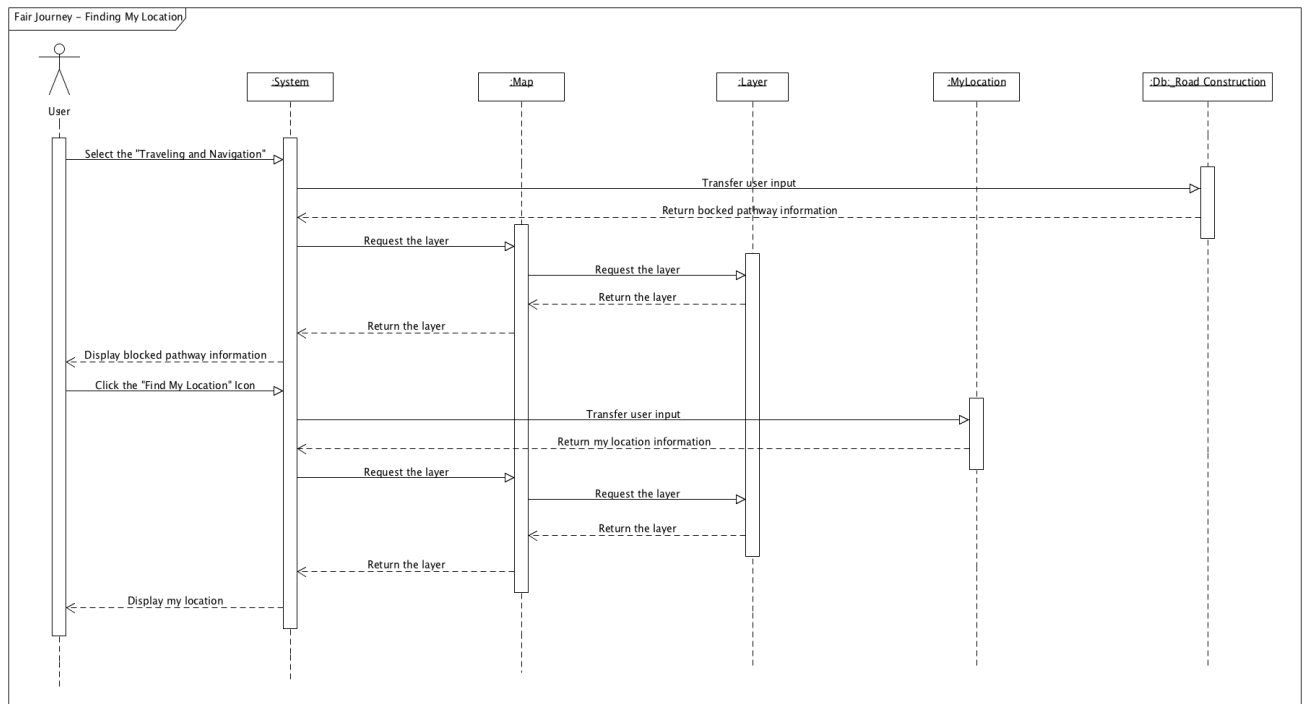


Figure 5. Sequence Diagram of the website

2.2.4. Communication Diagram

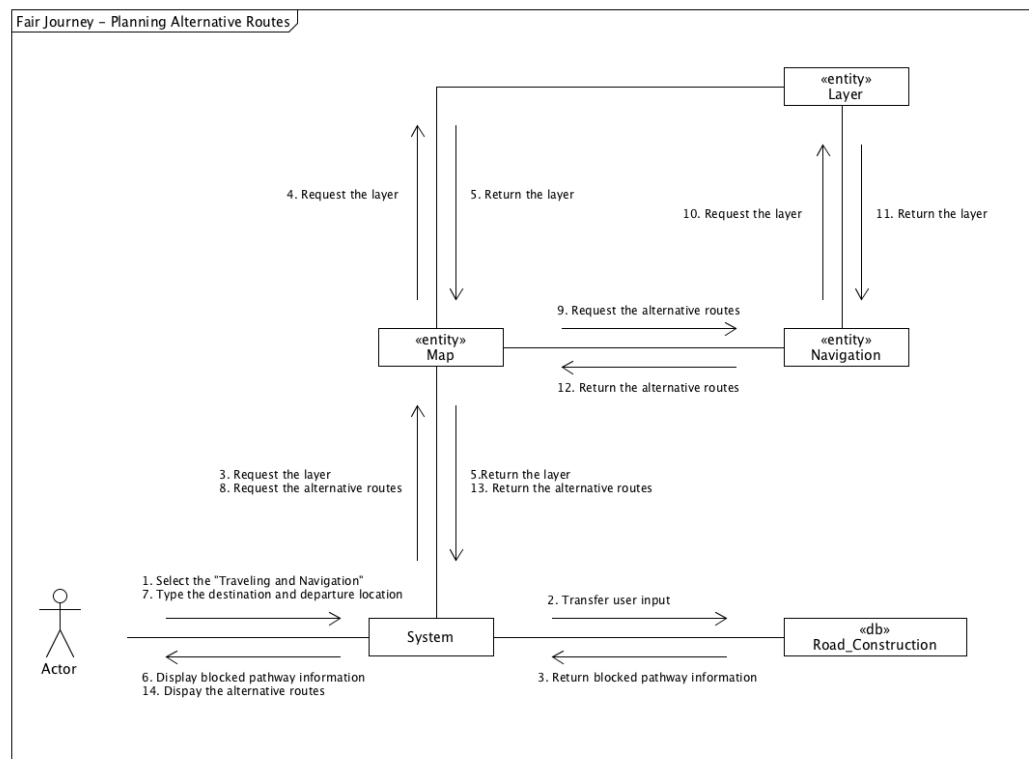


Figure 6. Communication Diagram of the website

2.2.5. Statechart

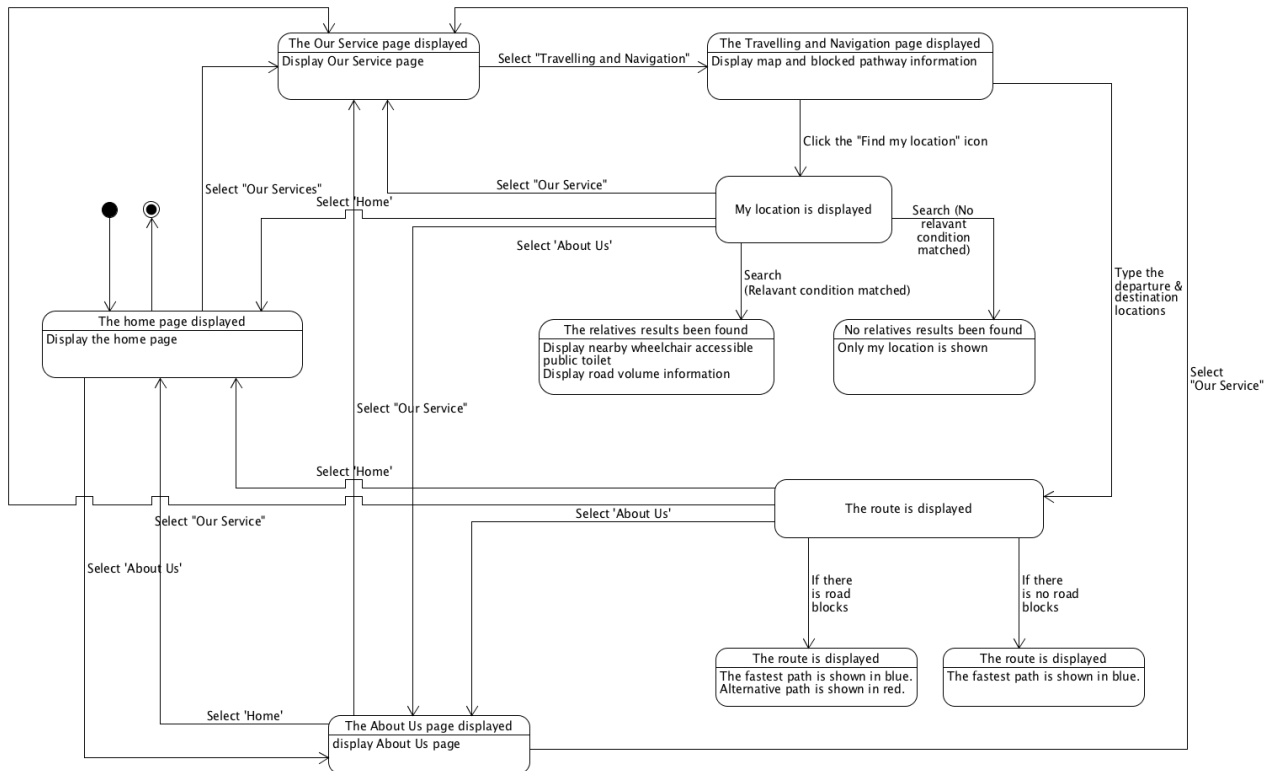


Figure 7. State Chart of the website

2.2.6. Sitemap

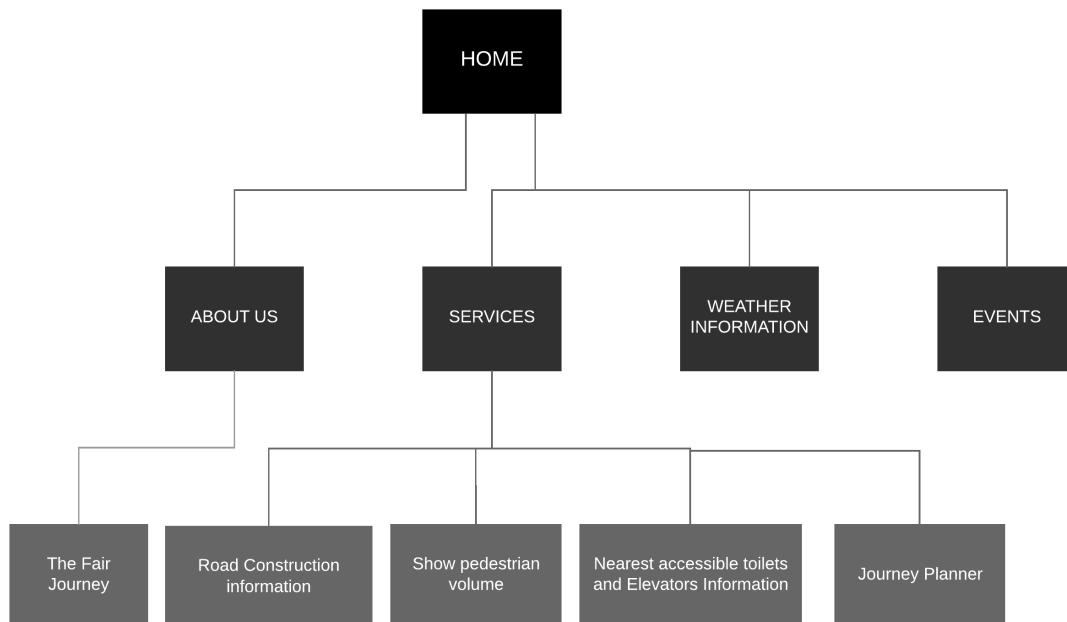
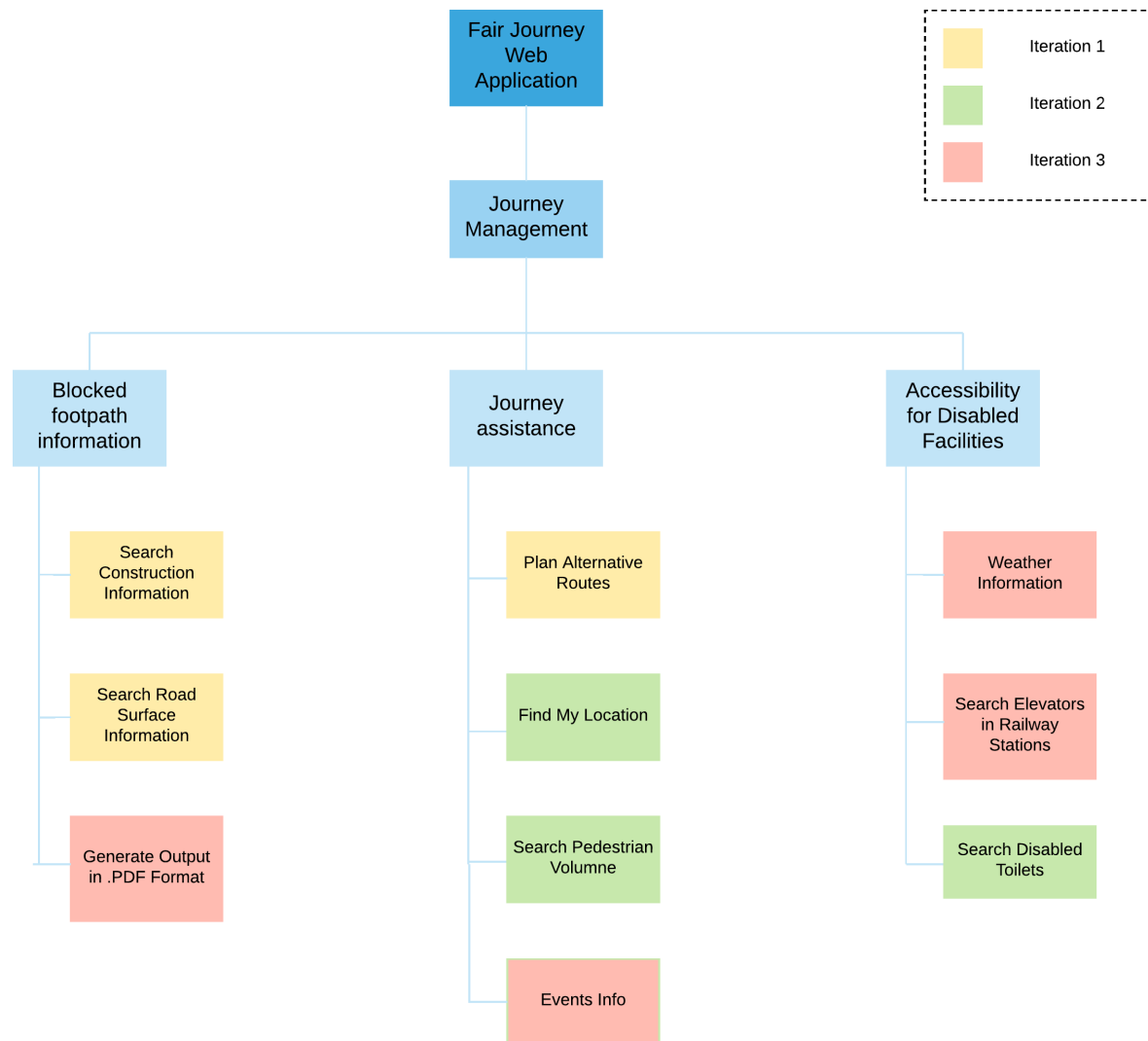


Figure 8. Sitemap of the website

2.2.7. Functional Diagram

*Figure 9: Functional Diagram for the Fair Journey*

2.2.8. Use Case Diagram



Figure 10: Functional Diagram for the Fair Journey

2.3. Security

The system is thoroughly tested in the aspect of security concerns. The following points brief the testing details and related security aspects of the Fair Journey system.

View the artefacts of security testing performed on Fair Journey system (See the Appendix).

- Https (HTTP secure) SSL certificate is set up for fairjourney.me domain and all the sub-domain, i.e., www.fairjourney.me, SSL certificate will secure communications between the server and clients.
- Redirection HTTP to HTTPS, users can type both https and HTTP header to access the websites, however, the system will automatically redirect HTTP to https to make secure connections.
- Firewall system blocks all the connections except the authorized one, decreasing the amount of information that malicious users can be retrieved by scanning tools.
- Disable Django admin interface outside the web server in case of confidential information leakage due to password brute forcing into the admin console by malicious users.
- Delete the default admin username for project Fair Journey and change it to another one, which is harder for malicious users to guessing or crack the admin credentials.

- Disable DEBUG setting to protect from Information Leakage vulnerability, which potentially reveals the project directory and web server settings when to request a crafted URL to the server.
- Customize the 404-error message when malicious users requesting the deliberate wrong URLs and redirect to the homepage.
- Enable SESSION_COOKIE_SECURE and CSRF_COOKIE_SECURE settings in Django to prevent Cross-Site Request Forgery attack.
- Implement login portal as a first entry in websites to restrict only the validated users can view the websites now.
- Implement limitation on ALLOWED_HOSTS field to the only fairjourney.me and all subdomains and block POST header request to prevent from HTTP host header attack.

3. SUPPORT ENVIRONMENT

This documentation provides the operating and support environment for Fair Journey web application system. This includes equipment, support software, database characteristics and personnel requirements for supporting maintenance of the system.

3.1. Equipment Environment

Fair Journey web application works in any web browser environments that supports HTML5 standards such as Apple's "Safari" browser, Google's "Chrome" browser, Windows "Internet Explorer" and "Edge" and Mozilla's "Firefox".

3.1.1. Computer Hardware

To use Fair Journey web application, it must require a server running this website. It is currently working on Amazon AWS server. Below are the minimum system requirements for the server.

Table 2. Minimum System Requirement

Server Operating Systems	Linux 4.16.10 or higher
Architecture & Operating System	64-bit
CPU	2 GHz Dual-core
Memory (RAM)	4 GB
Disk space	120 GB

3.1.2. Facilities

Fair Journey web application works in any web browser environments that support HTML5; but, we highly recommend using Google Chrome browser to check all types of mobile browser experience.

3.2. Support Software

Table 3. Software Requirements

Web Server	HTTPS
Python	3.6
PyCharm	2018.2.2
SQLite	3
Bootstrap	3
jQuery	1.10.12
JavaScript	1.12.4

3.3. Database Characteristics

The web application use GeoJSON file to maintain the data because all data are loaded in the Mapbox package. On the other hand, the Django framework contains the SQLite database, which can be used to store previous datasets.

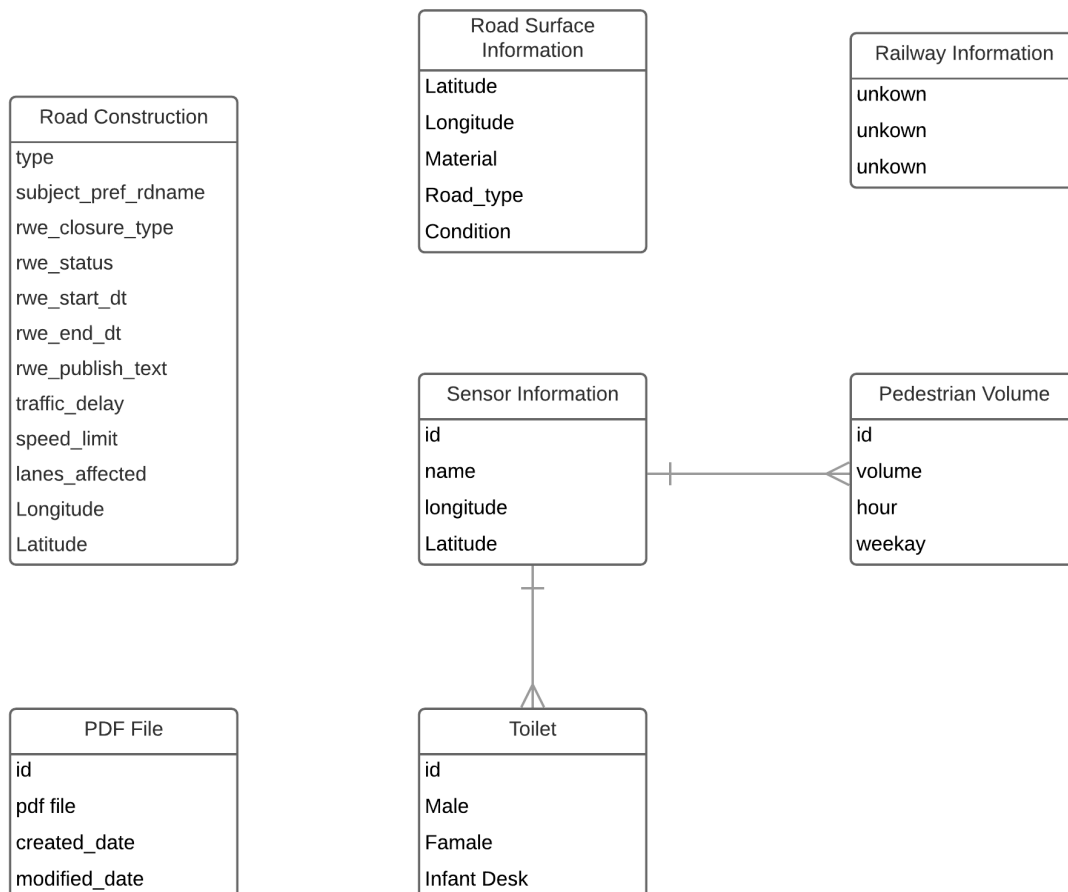


Figure 11. Relational Database of the Website

3.4 Personnel

The maintenance personnel require the following skills to maintain this web application system.

- Python
- Python Django
- CSS
- HTML
- jQuery
- JavaScript
- JSON
- GeoJSON
- SQLite

4. SYSTEM MAINTENANCE PROCEDURES

4.1. Conventions

The website is built on Django framework and please following maintenance procedure and make a backup when doing changes.

All datasets are from public datasets and VicRoads, users should register their own API to access real-time datasets.

4.2. Verification Procedures

The website contains super administrator on servers, a superuser can be created through the command on the server:

Python manage.py create superuser

Through link www.fairjourney.me/admin, an administrator can log in the backend of the website.

4.3. Error Conditions

To maintain the website, the PyCharm IDE and Jupiter Notebook are needed to maintain the source code.

The PyCharm download link:

<https://www.jetbrains.com/pycharm/download/#section=windows>

The Jupiter notebook download link:

<http://jupyter.org/install>

4.4. Maintenance Software

Debug and Manual mode Manually launch the web service and check the debug logs by issuing the following command: #> python /fiar/manage.py runserver & Validation and Testing

After maintaining the task, an administrator should run the following testing plan to check the application status:

1. Load the index page of the website www.fairjourney.me
2. Test alternative routine function
3. Test toilet and lift function

5. TESTING INFORMATION

5.1. Integrity Testing plan

This section corresponds to the quality of the Fair Journey website and to the level by which users examine the data of the system, quality, integrity and reliability of the system. Pro-Planners' system integrity testing verifies that the website is accurate, and functions as expected within the Fair Journey application. Below is the set of acceptance criteria for every functionality present in the system.

Table 4. Integrity Testing Plan

Activity	Pass/Fail	Comments
<p><u>User Story 1.1</u></p> <p>Road Construction Information</p> <p>Jaime wants to be aware of any roads or buildings that are under construction in the Swanston street. In case of any construction, he would like to avoid that disrupted area.</p> <ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. • Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. • Click 'Plan More' button under Journey Planner. Enter 'Start Point' and 'Destination' (location names in Melbourne CBD) • Click 'Show Constructions' in the left-hand side of the web page. • 'Road construction' icons should be displayed on the map page along the side of the route if any constructions are ongoing. ('Road construction' icons will be displayed away from the route if construction activities are going on apart from the route) 		
<p><u>User Story 1.2</u></p> <p>Road Surface Information</p>		

<p>Jaime would like to know if he can drive his wheelchair on any particular footpath by understanding the surface condition of the footpath.</p>		
<ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. • Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. • Click 'Plan More' button under 'Road Surface Information'. • Zoom in the page to see the street of your choice. • Click on the street to obtain information about 'Type' of the pathway and the 'material' used for the pathway. • This helps a disabled person to decide if he/she wants to use that street or not. 		
<p><u>User Story 1.3</u></p> <p>Planning alternative routes</p> <p>Jaime would like to plan his journey through an alternative route that takes him to his destination point.</p>		
<ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. • Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. • Click 'Plan More' button under Journey Planner. Enter 'Start Point' and 'Destination' (location names in Melbourne CBD). • The map should display the route in blue color. • Click the street you want to have as 'via' route around the already displayed route. • The map should generate a new route in grey color. 		
<p><u>User Story 2.1</u></p> <p>Pedestrian Volume</p> <p>Jaime would like to know the average pedestrian volume in the Melbourne CBD as he would like to plan his journey during less pedestrian volume.</p>		
<ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. • Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. • Click 'Plan More' button under 'Pedestrian Volume'. 		

<ul style="list-style-type: none"> The map will display 3 different colored icons - Blue representing least number of population (0-300 people), Orange representing medium crowd (300-700 people) and Red representing high volume of pedestrian in that area (more than 700 people) 		
<p><u>User Story 2.2</u></p> <p>My Location – Nearest disruption</p> <p>Jaime wants to go back home from Melbourne Central and wants to check in advance if there are any disruptions around him, so he can plan to choose an alternative path to avoid delays.</p>		
<ul style="list-style-type: none"> Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. Click 'Plan More' button under Journey Planner. Click 'my location' icon on the top right side on the map view display. The web page should display your current location in Melbourne CBD if you are in and around CBD, otherwise your actual location. 		
<p><u>User Story 2.3</u></p> <p>Accessible Public Toilets</p> <p>Jaime wants to know the nearest accessible public toilets for people with disabilities.</p>		
<p>Scenario 1: When the user has entered the start point and destination. The user wants to find Accessible Public Toilets around the route selected.</p> <ul style="list-style-type: none"> Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. Click 'Plan More' button under Journey Planner. Input 'Start Point' and 'Destination' (location names in Melbourne CBD) consisting of elevators. Click 'Show Toilets' on the left-hand side of the website to view Accessible Public Toilets. Double click on the Yellow icon, to show the route from the current location to the toilet. 		

<p>Scenario 2: When the user is in the home page and wants to find out Accessible Public Toilets in Melbourne CBD.</p> <ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. • Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. • Click 'Plan More' button under 'Accessible Toilets and Elevators'. • The Yellow icons displayed on the map are the Accessible Toilets. 		
<p><u>User Story 3.1</u></p> <p>Generating the outputs in .PDF format</p> <p>Jaime has difficulty viewing information on his smartphone because of the screen size. He prefers to browse the Fair Journey website on his desktop monitor and wants to print out his journey plan on the website.</p>		
<ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. • Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. • Click 'Plan More' button under Journey Planner. • Input 'Start Point' and 'Destination' (location names in Melbourne CBD) • Click 'PDF' button on the left-hand side to download the route details. • .pdf file should be downloaded consisting of routes details with estimated time required to reach the destination and distance from the start point to the destination. 		
<p><u>User Story 3.2</u></p> <p>Elevator information</p> <p>Jaime wants to know if there is an elevator facility in a train station to go to the platform, so he can efficiently get into the elevator along with his wheelchair.</p>		
<p>Scenario 1: When the user has entered the start point and destination. The user wants to find our elevators around the route selected.</p>		

<ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. • Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. • Click 'Plan More' button under Journey Planner. • Input 'Start Point' and 'Destination' (location names in Melbourne CBD) consisting of elevators. • The elevators in the red icon have to be displayed. Hover the mouse to see the station name. • Click 'Show Elevators' on the left-hand side of the website to view train stations. • Double click on the red icon, to show the route from the current location to the selected elevator. <p>Scenario 2: When the user is in the home page and wants to find out elevators in Melbourne CBD.</p> <ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. • Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. • Click 'Plan More' button under 'Accessible Toilets and Elevators'. • The red icons displayed on the map are the elevators with the train station names. Hover the mouse on the icon to see the station name. 		
<p><u>User Story 3.3</u></p> <p>Weather information</p> <p>Jaime would like to understand the weather conditions in the Melbourne CBD around the time he plans to travel for tomorrow afternoon.</p>		
<ul style="list-style-type: none"> • Access website link. Go to Home Page and click 'Start Planning'. • Click 'Weather' or scroll down until you find 'Weather'. • Click units as per your choice to see the temperature details. • Weather details are real-time data. • Click the forecast to see the following days' weather conditions to help you plan your journey accordingly. 		

User Story 3.4**Events Information**

Jaime would like to know all the events that occur in Melbourne CBD, so he can avoid those streets as it will have a high volume of pedestrians due to the events.

- Access website link. Go to Home Page and click 'Start Planning'.
- Click "Events" or scroll down until you find 'Events'.
- Click the month of your choice to view the events and its details to help you plan your journey ahead.

5.2. Integrity Testing

This test was last updated on October 7, 2018.

Table 5. Integrity Testing Plan

SI number	Functionality	Result
1	Generating the outputs in .PDF format	Passed
2	Elevator information	Passed
3	Educational Articles	Passed
4	Educational Articles	Passed
5	Weather information	Passed
6	Events Information	Passed

5.3. Usability Testing plan

The Monash IE Studio mentors, the Faculty and peers of the Pro-Planners team will be performing a blind testing to check if the all functionalities across the website are working bug-free. This step aims to identify if the website meets the acceptance criteria for the successful execution of the functionalities thus providing a pleasant experience for the user with easy navigation and understandability of the website.

Table 6. Usability Testing Plan – Iteration 1

Iteration 1		URL: https://fairjourney.me	Date Reviewed: 31/08/2018	
User Story		Acceptance Criteria	Accepted (y/n)	Feedback
Number	Name			
i1.1	Road construction information	<ol style="list-style-type: none"> Go to the home page Scroll down and select "Road construction" or Click "Our Services". Type the place name you want to know if there are disruptions. If the searched name is present, it shows details of the disruption. If search results do not return the location, it means there is no disruption in the location provided. 		
i1.2	Road surface information	<ol style="list-style-type: none"> Go to the home page Scroll down and select "Surface Information" or Click "Our Services". Click the "Surface Information" Click "Navigation to Location" icon in the left top corner. Type the location you desire to find the road surface condition around Click on the streets to understand what type of surface it is which can help the user to decide to use that street or not. 		
i1.3	Planning alternative routes	<ol style="list-style-type: none"> Go to the home page Scroll down and select "Surface Information" or Click "Our Services". Click "Travelling and Navigation". The Star icon indicates the construction area. Click on Star icon to see what kind of construction is in progress. Type the Source place name on the Search field in the top-right corner of the web page. Click the "Planning" icon. Leave pointers on the page you think is convenient for you to reach the destination. The web page displays information of the Distance from Source to Destination and Time required to travel from Source to the destination on the left-top corner. 		
General Feedback Comments:				

Table 7. Usability Testing Plan – Iteration 2

Iteration 2		URL: https://fairjourney.me	Date Reviewed: 14/09/2018	
User Story		Acceptance Criteria	Accepted (y/n)	Feedback
2.1	Pedestrian Volume	In-progress		
2.2	My Location – Nearest disruption	<ul style="list-style-type: none"> i. Access the website link. ii. Hover the mouse on 'Our Services' in the navigation toolbar. iii. Select Road Construction Information. iv. Click 'My Location' icon on the top right-hand side of the website. v. The current location has to be pointed/marked on the map. 		
2.3	Accessible Public Toilets	<p>Scenario 1: If the user is already in Melbourne CBD;</p> <ul style="list-style-type: none"> i. Access the website link. ii. Hover the mouse on 'Our Services' in the navigation toolbar. iii. Select 'Nearest accessible public toilets' iv. Click 'My Location' icon on the top right-hand side of the website. v. The nearest toilets for disabilities should be displayed. vi. Hover the mouse on the 'Toilet' icon vii. The icon should display information about the access for wheelchair disabled people. viii. In case the user is unaware of the route to reach the toilet, double click on the Toilet icon > It should display: <ul style="list-style-type: none"> o The directions on the map. o Time required to reach the toilet and distance from my location to the toilet on the left-hand side of the website. <p>Scenario 2: If user is planning to go to a particular location in Melbourne CBD ex: Flinders Street, Melbourne CBD;</p> <ul style="list-style-type: none"> i. Access the website link. ii. Hover the mouse on 'Our Services' in the navigation toolbar. iii. Select 'Nearest accessible public toilets' iv. Enter 'Flinders Street' in the Start Point text field (left-hand side of the website) v. Auto select the location if need be. ix. The nearest toilets for disabilities should be displayed. x. Hover the mouse on the 'Toilet' icon xi. The icon should display information about the access for wheelchair disabled people. xii. In case the user is unaware of the route to reach the toilet, double click on the Toilet icon > It should display: <ul style="list-style-type: none"> o The directions on the map. o Time required to reach the toilet and distance from my location to the toilet on the left-hand side of the website. 		
General Feedback Comments				

Table 8. Usability Testing Plan – Iteration 3

Iteration 3		URL: https://fairjourney.me	Date Reviewed: 01/10/2018	
User Story		Acceptance Criteria	Accepted (y/n)	Feedback
3.1	Generating the outputs in .PDF format	<ul style="list-style-type: none"> Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. Click 'Plan More' button under Journey Planner. Input 'Start Point' and 'Destination' (location names in Melbourne CBD) Click 'PDF' button on the left-hand side to download the route details. .pdf file should be downloaded consisting of routes details with estimated time required to reach the destination and distance from the start point to the destination. 		
3.2	Elevator information	<p>Scenario 1: When the user has entered the start point and destination. The user wants to find out elevators around the route selected.</p> <ul style="list-style-type: none"> Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. Click 'Plan More' button under Journey Planner. Input 'Start Point' and 'Destination' (location names in Melbourne CBD) consisting of elevators. The elevators in the red icon have to be displayed. Hover the mouse to see the station name. Click 'Show Elevators' on the left-hand side of the website to view train stations. Double click on the red icon, to show the route from the current location to the selected elevator. <p>Scenario 2: When the user is in the home page and wants to find out elevators in Melbourne CBD.</p> <ul style="list-style-type: none"> Access website link. Go to Home Page and click 'Start Planning' or scroll down the home page. Click 'Services' or scroll down until you reach 'SERVICES' consisting of four 4 different services. Click 'Plan More' button under 'Accessible Toilets and Elevators'. The red icons displayed on the map are the elevators with the train station names. Hover the mouse on the icon to see the station name. 		
3.3	Educational Articles	<ul style="list-style-type: none"> Access website link. Go to Home Page and click 'Start Planning'. Click 'Pedestrian Safety' or scroll down. Find the related articles to understand and know information related to safety during the disruption times in CBD. 		
3.4	Weather information	<ul style="list-style-type: none"> Access website link. Go to Home Page and click 'Start Planning'. Click 'Weather' or scroll down until you find 'Weather'. Click units as per your choice to see the temperature details. Weather details are real-time data. Click the forecast to see the following days' weather conditions to help you plan your journey accordingly. 		
3.5	Events Information	<ul style="list-style-type: none"> Access website link. Go to Home Page and click 'Start Planning'. Click "Events" or scroll down until you find 'Events'. Click the month of your choice to view the events and its details to help you plan your journey ahead. 		
General Feedback:				

5.4. Types of Testing

Pro-Planners has ensured Fair Journey system is developed, implemented and tested rigorously to deliver defect-free websites. Below are the different types of testing performed on the system:

Table 8. Types of Testing

Testing Methods	Tested By	Testing Environment
White box testing / Unit Testing	Web developer	Django project
Functional Testing	Software tester	Various desktop browsers
Functional Testing	Software tester	Various desktop browsers
Integration Testing	Software tester	Various desktop browsers
System Testing	Software tester	Various desktop browsers
Security Testing	Security tester	Web server, front-end website
Test – Bug Fixes/ Defects fixed	Software tester	Various desktop browsers

The application has been tested with different testing methods as above during the prototype, and all three iterations. As part of testing the system has been tested by a novice user and usability testing scenario has been captured. The video location is provided in the product document.

5.5. General Test Case Template #N

This template can continue to use by increasing the test number

Test Case Name:	Finding current location			
Test ID:	# (e.g. 1)			
Hardware Required:	Linux Server Computing			
Software Required:	Linux 4.16.10 Python 3.6 PyCharm 2018.2.2			
Duration:	Elapsed clock time			
Effort:	Person-hours			
Setup:	Finding current location			
Teardown:	List steps needed to return SUT to pretest state			
ID	Test Step/Substep	Result	Bug ID	Bug RPN
1.000 1.001 1.002	(e.g) Open the map (e.g) scroll the map (e.g) click the current location icon			
Execution Summary	Status System Config ID Tester Date Completed Effort Duration	1		

Figure 12. Relational Database of the Website

1

Rex

Black:

If any test step or substep is in progress, then the entire test case is "IP"; else if any step or substep is blocked, then the entire test case is "Block"; else if any step or substep failed, then entire case is "Fail", else if any step or substep warned, then entire case is "Warn"; else if all steps pass, the entire case is "Pass".

APPENDIX

Artefacts of Security Testing performed on Fair Journey website application by Pro-Planners.

1.

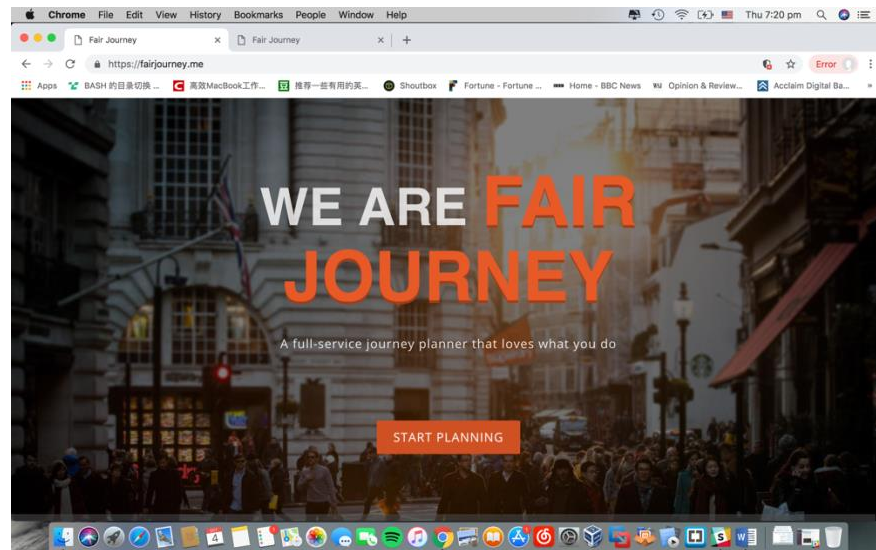


Figure 13. *https working on fairjourney.me*

2.

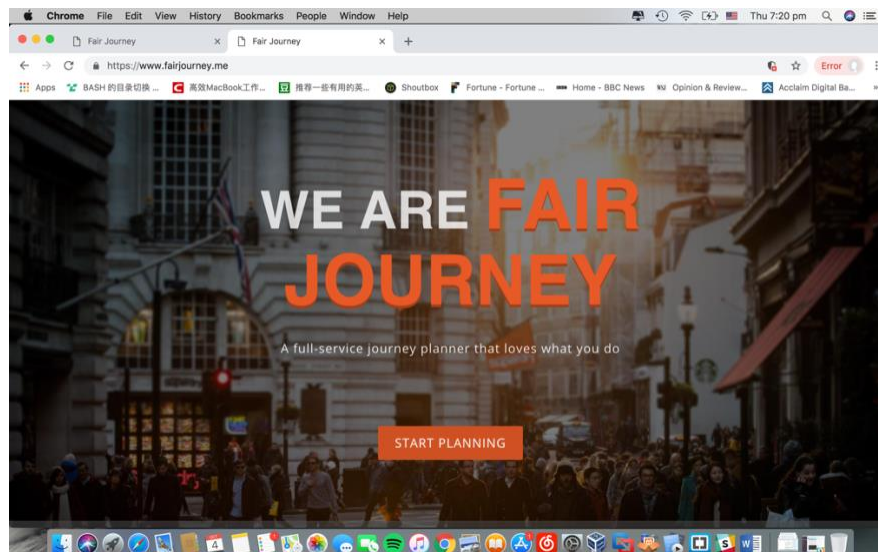
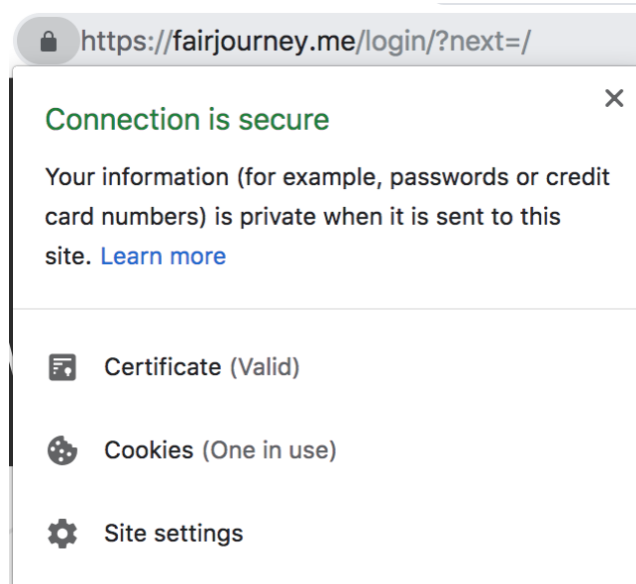


Figure 14. *https working on www.fairjourney.me*

3.

*Figure 15. Secure certificates*

4.

*Figure 16. Disable admin interface of Django*

5.



Figure 17. customize error message page, supply the link go back

6.

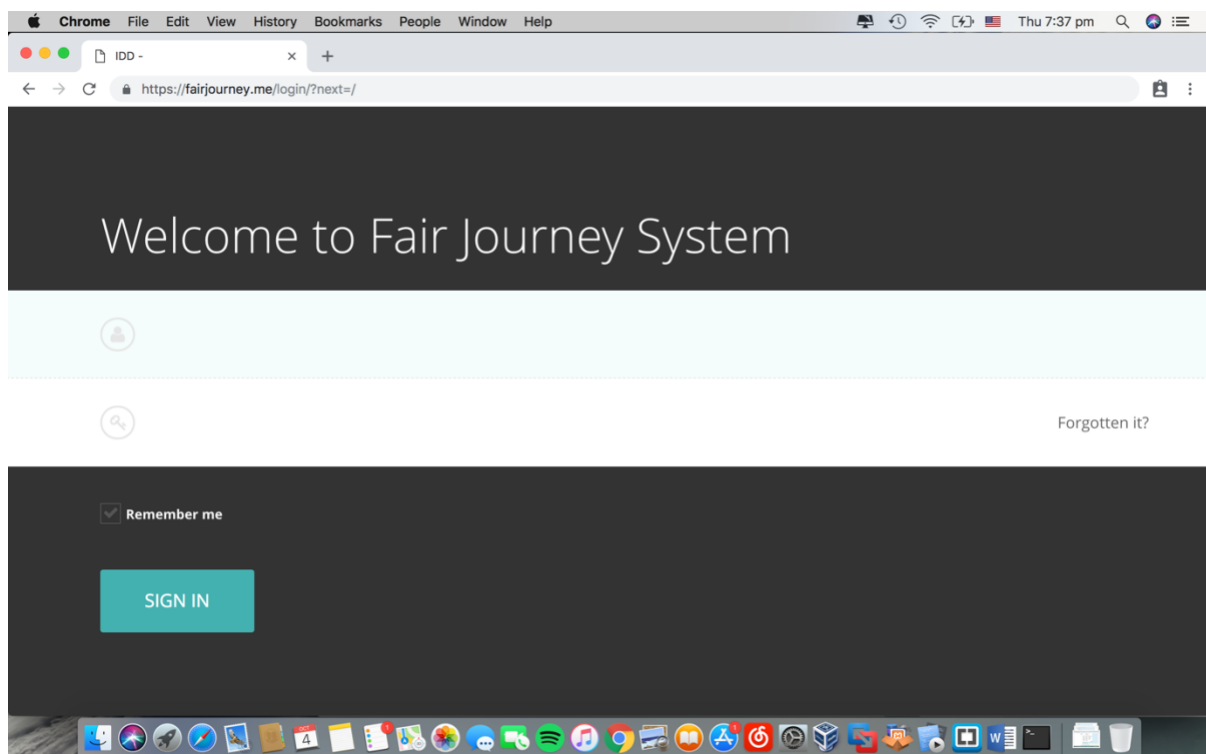


Figure 18. login page for websites