



SUPPORT DOCUMENTATION

Topic: Construction Disruption

Expected Audience

Department of Health and Human Service,

Disability Services Australia

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1. Introduction

1.1 Purpose

The purpose of this support documentation is to help to mitigation of Fair Journey web application system for maintenance personnel or further software developers to help them maintain, quickly understand the system more efficiently and make possible changes after delivery process.

1.2 Project Overview

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.

Serial No.	Access Names	Links
1	Fair Journey System	https://fairjourney.me
2	Product Video	https://youtu.be/JNwHv6sj8xE
3	Usability Testing Video	https://www.youtube.com/watch?v=7nvGDGc59cg&feature=youtu.be

2. Day-to-Day Procedures

2.1. Datasets Update

The data linked to the Fair Journey system is from the Vic Roads and City of Melbourne. These datasets are updated on a daily basis and weekly basis. As and when the datasets are updated, the Fair Journey system is automatically obtaining real-time information.

2.2. Maintenance

The administrator using the website will be involved in maintaining the server, specifically monitoring the log files such as error.log and access.log of Apache server.

3. Security and Privacy

3.1. Security Policies

Below are the security components may implement onto the project:

1. Web server firewall to prevent from unauthorized access to server,
2. Intrusion detection system to mitigate the risks of intrusion.

3.2. Restore Policies

Below are the various steps to mitigate when the Fair Journey system have been crashed or attacked:

1. Access to web server remotely or physically

2. Using github command to download the backup version of project
3. Restart the apache service with new downloaded project
4. Inspecting log files mentioned above to find any suspicious access
5. Ban the IP address found above if necessary

4. Training Information

The knowledge below is needed to maintain and manage for non-admin person:

1. Linux-like distribution administration skills
2. Experienced in web hosting software, like apache, nginx
3. Understood the concept of how to implement SSL certificates and http secure protocol
4. Experienced in Python 3 programming
5. Familiar with Javascript, which contributes front end interaction logic

Training Name	Hours	No. of instructors
Linux administration skills	6	2
Web hosting skills	3	1
Https protocol concept	1	1
Python 3 programming skill	8	2
Javascript skills	4	1

5. Future Site Preparation

5.1. Server Setup

The following steps introduce installation and configuration commands of all necessary dependencies:

1. check for version of python at local OS environment:
if does not have python installed, or version is not python 3, using the command below to install on Ubuntu distribution or equivalent commands on other linux distributions.

sudo apt-get update && apt-get install python3
2. install pip python management tool and Django on system:
apt-get install python3-pip
pip3 install Django
3. Install apache with mod-wsgi to work with Django wsgi.py:
sudo apt-get install apache2 libapache2-mod-wsgi-py3
4. Configure apache 000-default.conf as shown below:
ServerName fairjourney.me
ServerAlias *.fairjourney.me
RewriteEngine On
RewriteCond %{SERVER_PORT} !^443\$
RewriteRule ^(.*)\$ https://%{HTTP_HOST}\$1 [R=301,L]
5. Configure apache default-ssl.conf with the following hierarchy:
ServerName fairjourney.me

```
ServerAlias *.fairjourney.me
Alias /static      /home/ubuntu/fair_journey/static
```

```
<Directory /home/ubuntu/fair_journey/static>
```

```
    Require all granted
```

```
</Directory>
```

```
<Directory /home/ubuntu/fair_journey/fair>
```

```
    <Files wsgi.py>
```

```
        Require all granted
```

```
    </Files>
```

```
</Directory>
```

```
WSGIDaemonProcess fair
```

```
WSGIProcessGroup fair
```

```
WSGIScriptAlias / /home/ubuntu/fair_journey/fair/wsgi.py
```

```
SSLEngine on
```

```
SSLCertificateFile      /etc/apache2/ssl/fairjourney_me.crt
```

```
SSLCertificateKeyFile   /etc/apache2/ssl/fairjourney_priv.key
```

```
SSLCertificateChainFile /etc/apache2/ssl/fairjourney_me.ca-bundle
```

6. Run apache server


```
sudo systemctl enable apache2
sudo systemctl restart apache2
```

5.2. Hosting Server Facility

Information about restore processes are explained in details above in the Restore Policies section.

5.3. Software and Hardware Tools

The following are the tools used in developing the website application.

Software types	Software tools
Coding Program	PyCharm
Web framework software	Django 2.1.2

Programing language	Python 3
Web hosting software	Apache2
Version control	Github
File management tool	Google Drive, Mahara
Communication tool	Slack, Gmail, Leankit
Web front-end framework	Bootstrap
Hosting web server platform	Amazon web service
Domain name service	Namecheap
SSL issuer	Possitive SSL

Hardware components	Minimum requirement
Processor	Intel(R) Xeon(R) CPU E5-2676 v3 @ 2.40GHz
RAM	2 Gb
Hard Disk	4 Gb

5.4. Deployment Dependencies

Fair Journey is a website Django application, writing in PyCharm software (python 3 version) which is hosting by Apache on remote Amazon Web Server (free Ubuntu image). However, our web application is compatible with any OS distribution environment that has python 3, Django 2.1.2 and apache equivalent web hosting package, e.g., nginx or tomcat. Although nginx or apache is recommended to deploy compatibly Django project in a production server. Fair Journey project can be distributed via our github link.

6. Data Maintenance

6.1 Date Information

Fair Journey project preprocess the open datasets retrieved from VIC roads and city of Melbourne and uploads on our github webpage as a requesting target from end users. Apart from open datasets, our project utilizes mapbox API to develop main functionality, journey planner. The api from weatherfor.us contributes to our weather forecast function.

Following are the datasets used by Fair Journey system:

- 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
- WeatherUs – Weather API
- Mapbox – Map API

6.2 Data Types

There are two kinds of data in existing project:

1. Open dataset from city of Melbourne and VIC road,
2. Mapbox API and weatherfor.us API

7. Future Enhancements

TP101 has provided the System's maintenance document for the continuous maintenance activities. Below link provides the location of the Maintenance document.

Link:

7.1. Skills Requirement

The system needs the following skilled workers to implement future enhancements:

1. Web developer: To develop python Django, front-end development
2. Data Analyst: To fetch data, clean data, data wrangling, process data and data preparation.
3. Software Tester and network security tester: Test to ensure the application is bug-free.
4. Web Administrator: To maintain the system, project in a daily basis to ensure the security of project.

8. Testing Information

8.1 Integrity Testing

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.

Sl 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

8.2 Types of Testing

TP101 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:

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.