Petrol Station Route Optimizer
User Guide

Introduction

The Petrol Station and Route Optimizer App is a Web information system, which is targeted at all Singaporean in locating a petrol station along their way. The website will allow the user to select the mode of purchase based on type of credit card or without, followed by the series of destinations the user intends to go. The user needs to enter at least 2 destinations, upon which the user can select either "My route is fixed" or "No fixed order".

The "My route is fixed" option will recommend the best petrol station and incorporate it into the fixed route and be displayed in the map accordingly. The "No fixed order" option will optimize the route and determine the order of destinations between the origin and destination. It will also incorporate the best petrol station, and the recommended route with its recommended petrol station will be displayed in the map.

Getting Started

System Requirements

Power Supplier Recommender system supports the following Web Browsers:
➢ Internet Explorer 11
➢ Microsoft Edge 39 and above
➢ Firefox 53 and 52 ESR and above
➢ Google Chrome Version 59 and above
➢ Safari Version 10 and above

Quick Start

In order to run the system, you will need to have a working Python installation with the necessary libraries installed:
➢ python-clips (install using apt-get)
➢ CLIPS
➢ Django
➢ Pandas
➢ numpy

Please note that this application only works in Python 2.
To install the libraries above, key in the command "pip install <library's name>".
To run our system, simply open a terminal,
enter: cd <path of the system>
python manage.py runserver

Launching the Application

Open your preferred browser and go to the URL "http://127.0.0.1:8000/" as shown below:

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The landing page of the application is as shown below. The first step is to select any of the credit card icon. However, if the user does not intend to pay by credit card, he can skip this step and proceed to select the destinations (refer to page 4).
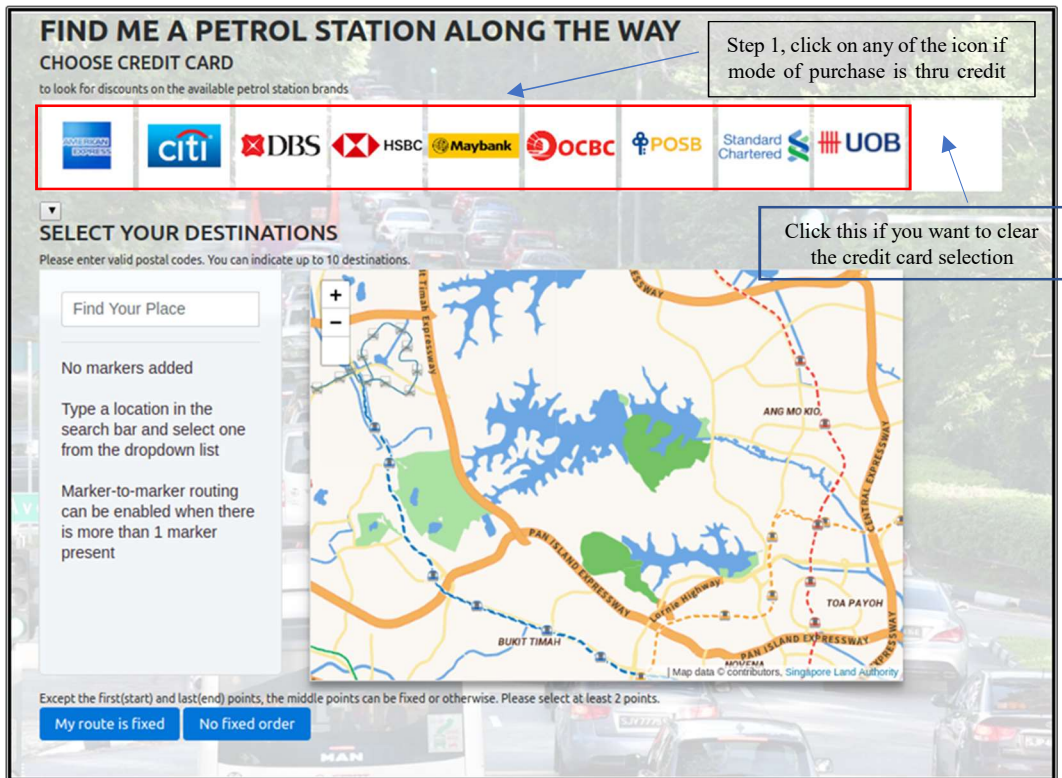

Figure 1: Petrol Station Route Optimizer landing page

By clicking on any of the credit card icon, the corresponding pull-down list of credit cards pertaining to the selected brand
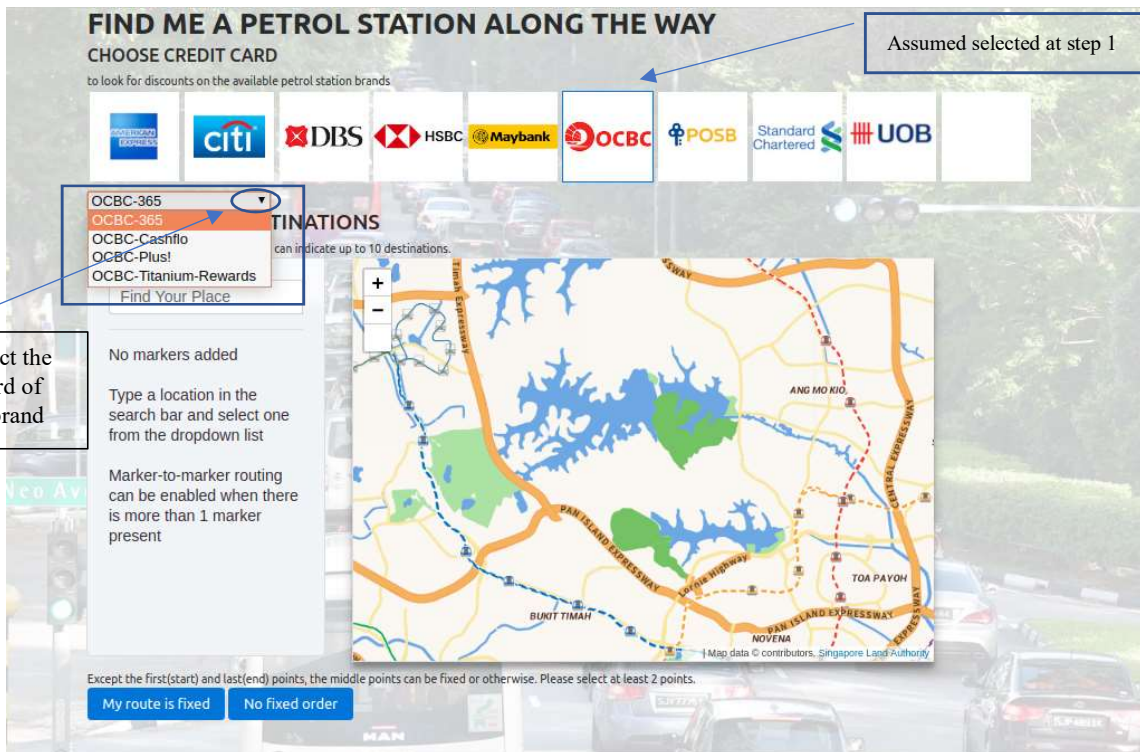

Figure 2: Select the preferred credit card

If the user does not intend to select any of the credit card, the user can skip the above steps and directly enter the list of destinations as shown below. See instruction in next page.
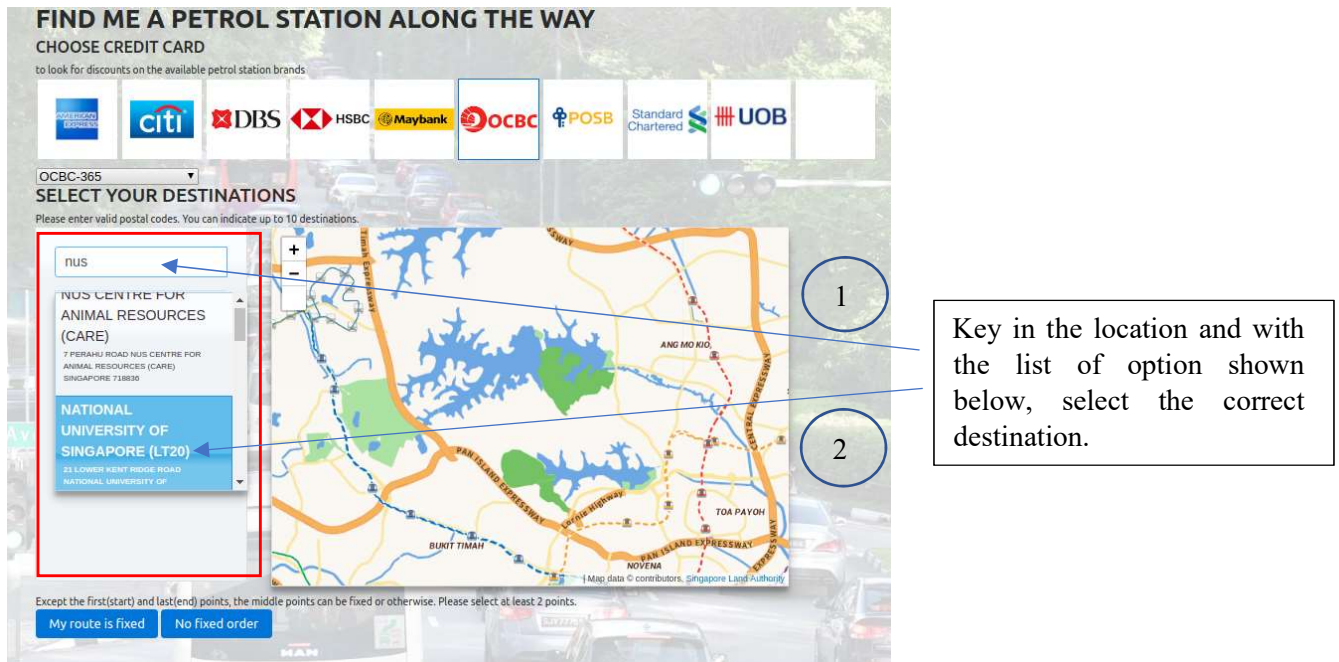
Entering the destinations

Figure 3: Select the destination - Entering fields

Each time the user enters a destination, the system will pop up a confirmation box as shown left box below. Click Create to confirm the destination and image on the right box will be shown indicating that the keyed in location is successfully registered in the system. Just repeat these similar steps to incorporate new locations. The system has maximum of 10 destinations and a minimum number of 2 destinations is required before activate the system to locate the petrol stations and its corresponding route.
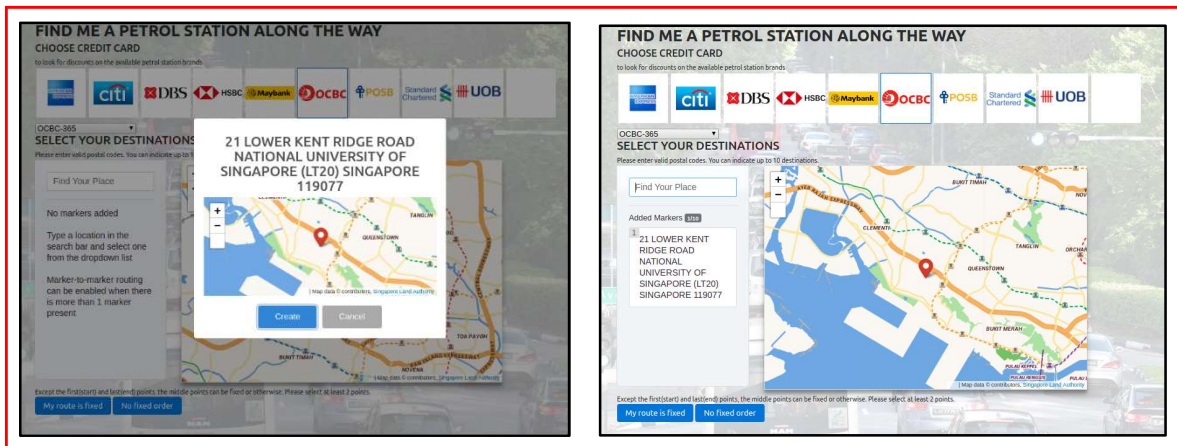

Figure 4: Screenshots showing the registering of destinations

Figure 5: Screenshot showing the option to choose "My route is fixed" or "No fixed order"

The "My route is fixed" option will recommend the best petrol station and incorporate it into the fixed route and be displayed in the map accordingly. The "No fixed order" option will optimize the route and determine the order of destinations between the origin and destination. It will also incorporate the best petrol station, and the recommended route with its recommended petrol station will be displayed in the map.
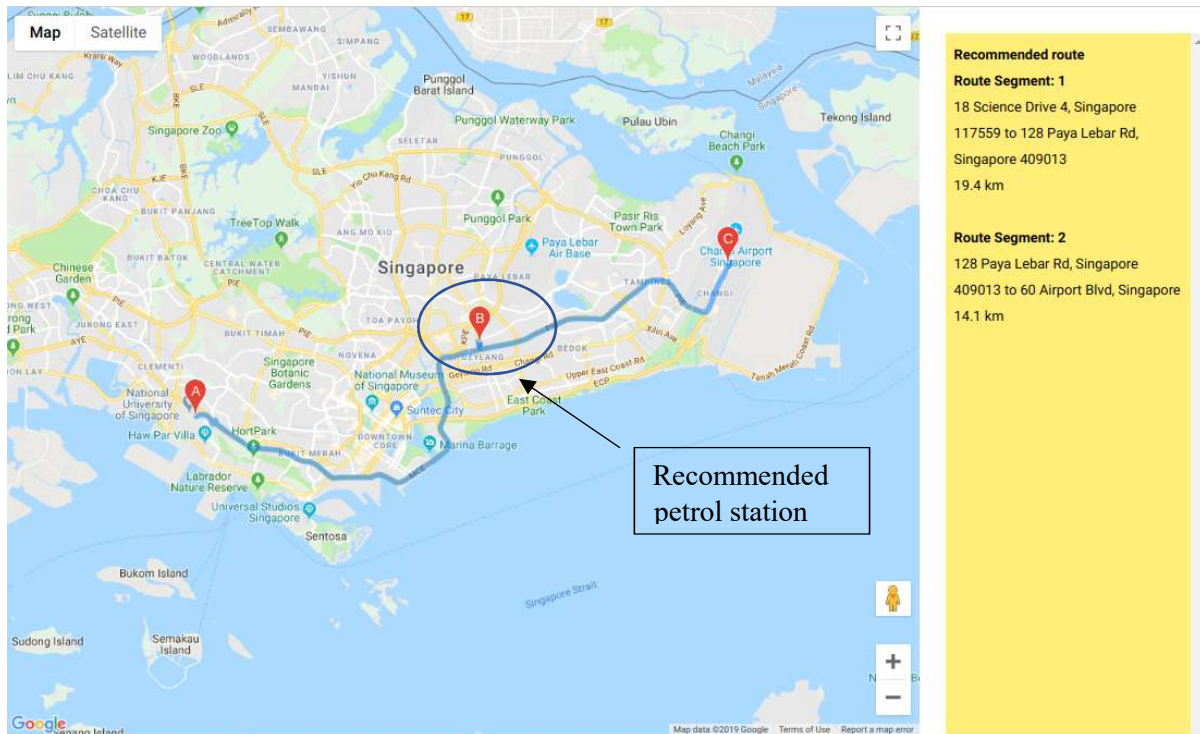
Figure 6: The recommended output from the "No fixed order" selection

Both the "My route is fixed" or "No fixed order" selection, will provide similar output as shown in Figure 6.

The recommend route shown on the right side of the above map, gives the breakdown of the route segments. The petrol station is at 128 Paya Lebar Road, Singapore 409013. It will also indicate the travel distance of this route segment.