User Manual

for

Traffic Light Optimization
Imagine Interactive Systems (Iminsys)

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1 Installation

1.1 For the current version

- A copy of Django is necessary to run the in-development version of the website, as well as Python.
- Clone the repository at GitHub to get started. To clone a GitHub repository to a PC, GitHub Desktop can be used. Follow the guide on the software's page. (See Figure 1.1)

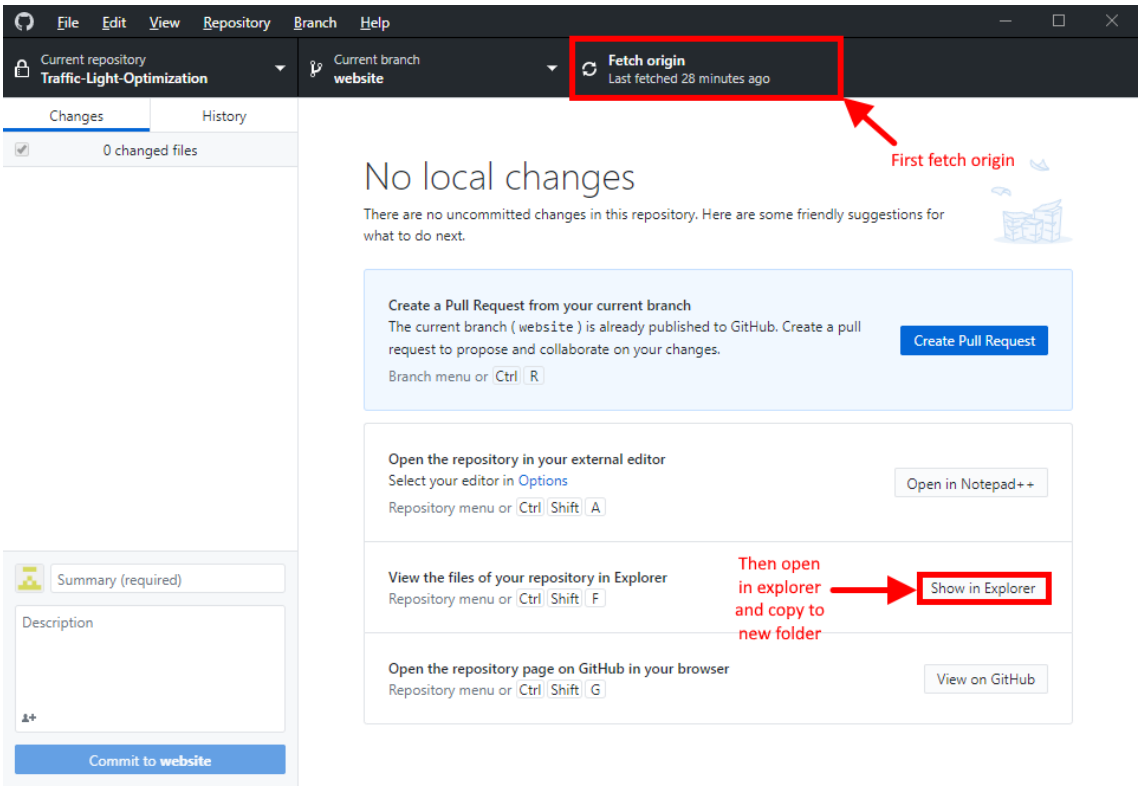

Figure 1.1: GitHub Desktop

- Once the repository has been cloned, copy everything in your local GitHub folder (under Documents) to a separate folder.

- Open the command line (cmd in Windows, terminal in Linux) and change the directory to the "tl_optimization" subfolder in this new folder.
- Enter the command "python manage.py runserver" in the command line to start the server. It will take a few moments to start the server, and it will then give a local URL from which it can be accessed. (For example, "127.0.0.1:8000".) Enter this URL into your web browser of choice, and append "/network" to the end ("127.0.0.1:8000/network") to arrive at the dashboard. (See Figure 1.2)

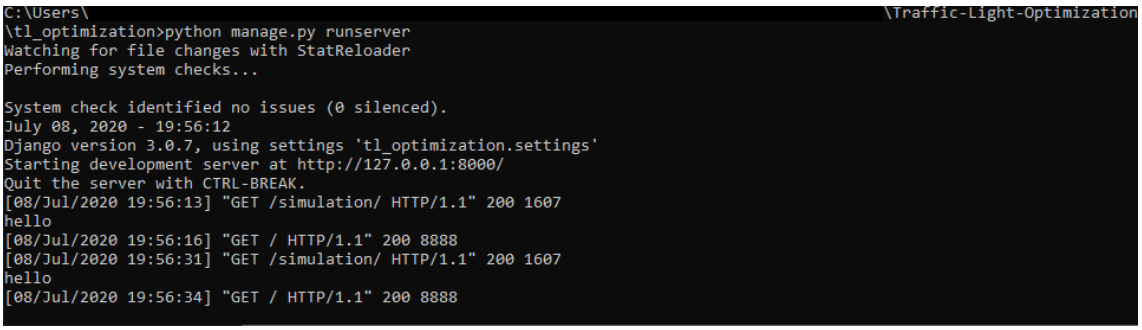

Figure 1.2: Command line

- The server can be stopped at any time by pressing CTRL and Pause/Break. The Pause/Break key is typically above the Page Up key and to the right of the Scroll Lock key on a standard QWERTY keyboard.

1.2 For a potential commercial version

As the system's user interface is a web page, no installation will be necessary on the user's side. The website should simply be accessed through any web browser, such as Google Chrome, Mozilla Firefox or Microsoft Edge. We do not have a URL yet, but if we did, it would be listed here.

2 Usage

2.1 Dashboard

(See Figure 2.1) When the user visits the website, they will see the dashboard. Here, they can (1) access the simulation area of the system by clicking the "Simulation" button in the sidebar on the left. They can also (2) click on a network name to view it, or (3) add a new network by typing in its name and clicking "Submit".

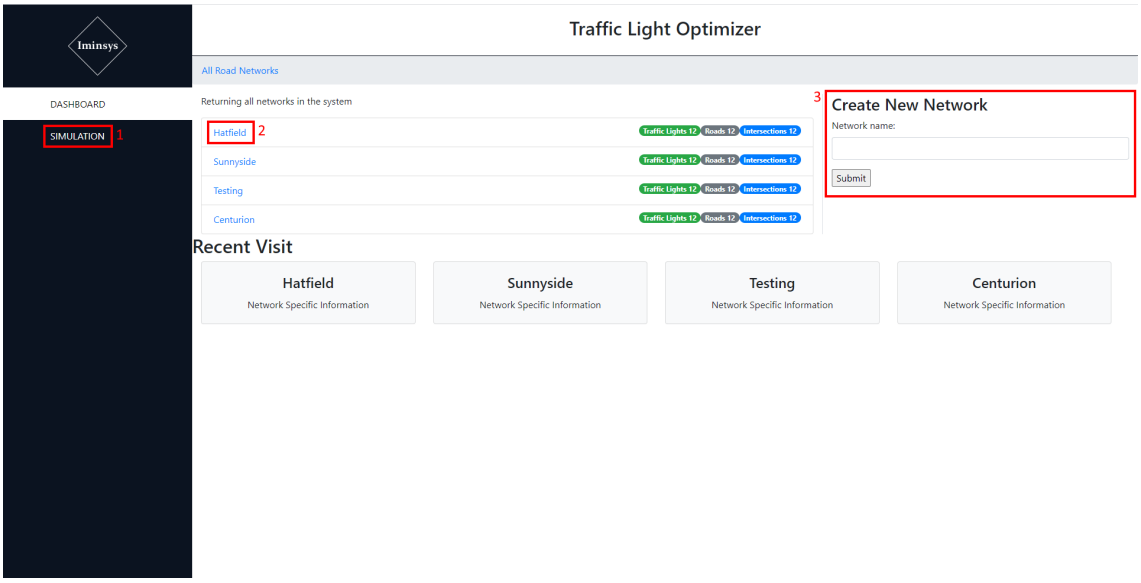

Figure 2.1: Dashboard

2.2 Network View

(See Figure 2.2) When the user accesses a single road network, they have the option to (1) view a particular intersection within the network by clicking its name, or (2) add a new intersection to the network. To add a new intersection, simply type in its name and click "Submit". Other options include uploading a network file (3) and adding traffic lights to a network (4).

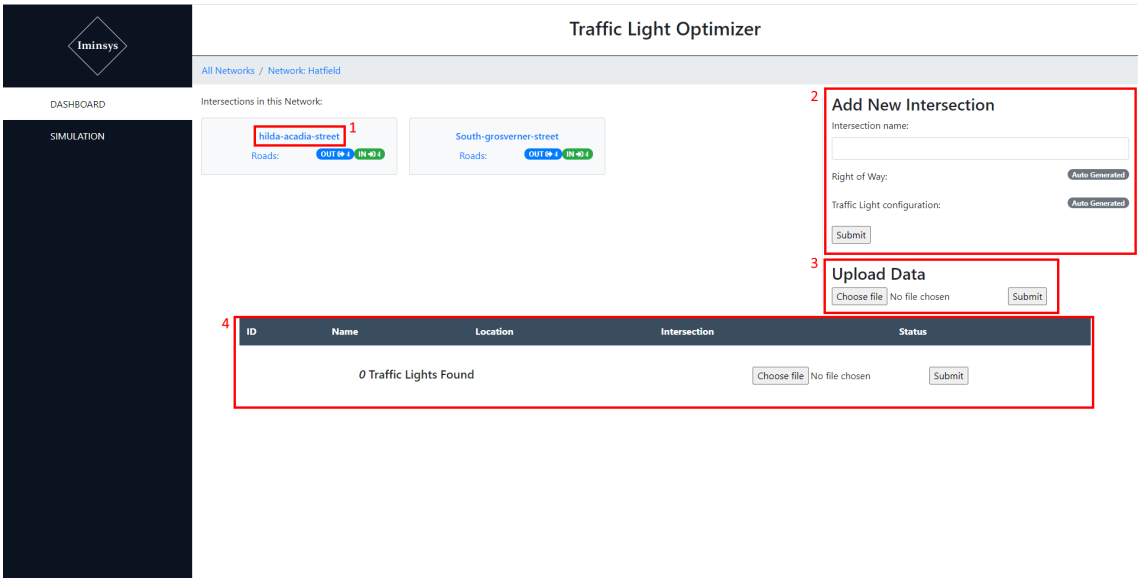

Figure 2.2: Network View

2.3 Intersection View

(See Figure 2.3) When the user accesses an intersection within a network, they have the option to (1) view the roads that meet at the intersection (Road IN and Road OUT), as well as (2) add a new road to the intersection. They can specify which intersections lead into and out of this road, as well as the road's capacity/length (in meters) and the average speed of a vehicle on this road (in kilometers per hour).

2.4 Simulation

(See Figure 2.4) If the user clicks the Simulation button in the bar on the left of the screen, they will be taken to the simulation area of the system. Here, they can configure and view simulated traffic based on the data they have uploaded. Currently, the simulation area only shows a recording of what it would look like. No actual simulation is being performed.

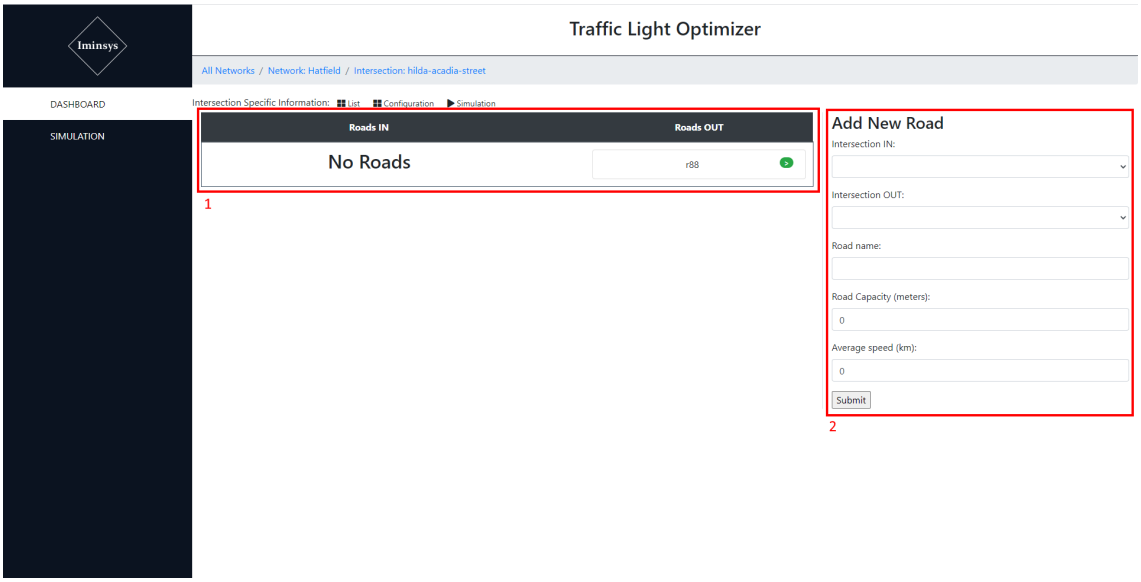

Figure 2.3: Intersection View

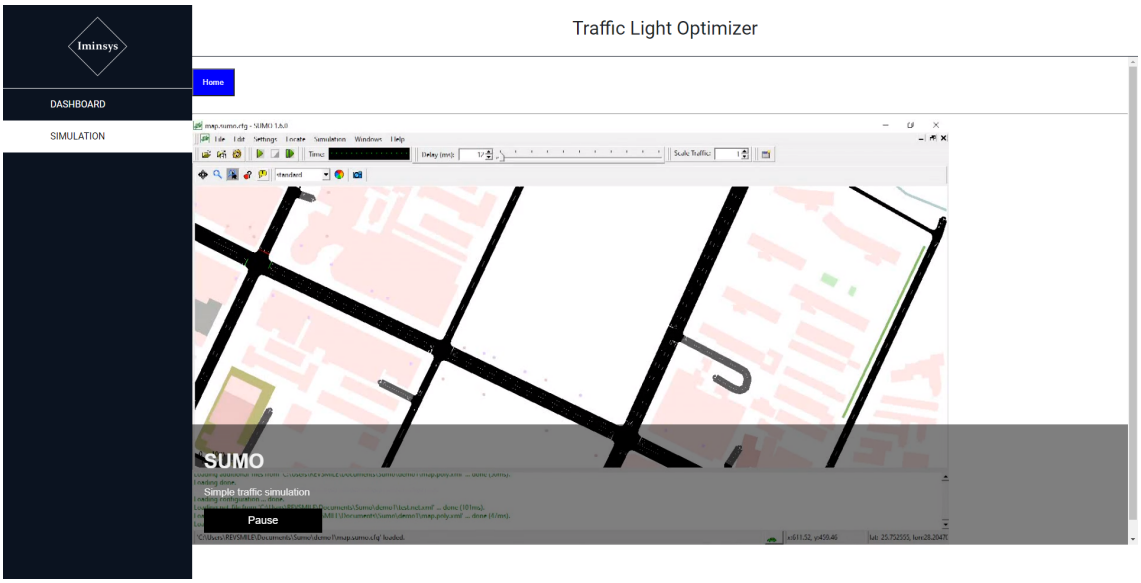

Figure 2.4: Simulation