

SpatialGuide Backend User Manual

System Specifications

In order to get Backend's server running in a machine some requirements must be matched as:

- Linux OS
- MySQL DataBase
- Python 3 the Packages:
 - django==2.0.3
 - djangorestframework
 - google-api-python-client
 - pyyaml
 - ua-parser
 - user-agents
 - django-user-agents
 - pusher_push_notifications

Installation

Start by opening a Linux terminal and follow the sections bellow which will tell which commands its need to execute.

MySQL installation:

It's required administrator privileges in order to install MySQL on the machine. Depending on the Linux distribution the install command may be different, in this example it was Debian.

sudo apt-get install mysql-client mysql-server

sudo service mysql start

sudo mysql -u root

(Here we on mysql database, so we are gonna create our database with the server expected name)

create database spatialguide_db;

exit (to return to the bash terminal)

Python and Libraries installation

Once again it's required administrator privileges but just to install the Python 3 interpreter and pip3 (python 3 package manager):

```
sudo apt-get install python3 python3-pip
```

```
pip3 install django==2.0.3 djangorestframework google-api-python-client
```

```
pip3 install pyyaml ua-parser user-agents django-user-agents
```

```
pip3 install pusher_push_notifications
```

Getting the Server Running

In first place it's required to synchronize the server database structure with the MySQL database.

First we navigate to the server folder with the name "SpatialGuide" then we run the following commands.

```
sudo python3 manage.py makemigrations
```

```
sudo python3 manage.py migrate
```

After the database have made all the synchronization required we need to create a super user to our server, this user is gonna be the one used to get access to the server and be able to create the first real user profile. In order to create a super user we run the following command and insert the desired credentials that are gonna be asked for.

```
sudo python3 manage.py createsuperuser
```

Finally to get the server running and for the next times it's only needed the following commands.

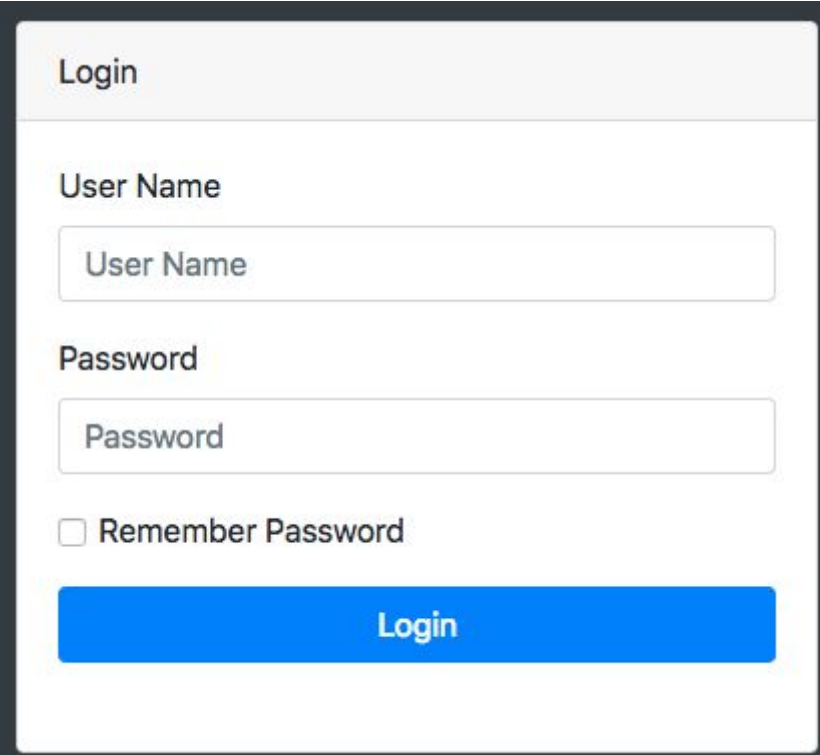
```
sudo service mysql start (to make sure the database server is running)
```

```
sudo python3 manage.py runserver 127.0.0.1:80
```

Finally just go to your browser and right on the url "127.0.0.1" and you should be prompt to the server page.

First Run

As it's told during the installation section of this manual, we have created a super user, when initiating the server for the first time it's required to login into through the login page. On this first stage we use the credentials used during the super user creating process mentioned on the previous section. After login for the first time go to the navbar on the left and choose "Register new User", here create your final user and relogin with the new account, using the logout button on the top right corner. Remember that the account create during the creation of a super user should be only used to create new accounts.

A login form with a light gray header containing the word "Login". Below the header, there are two input fields: "User Name" and "Password", each with a placeholder of the same name. Below the password field is a checkbox labeled "Remember Password". At the bottom of the form is a large blue button with the text "Login" in white.

Login

User Name

Password

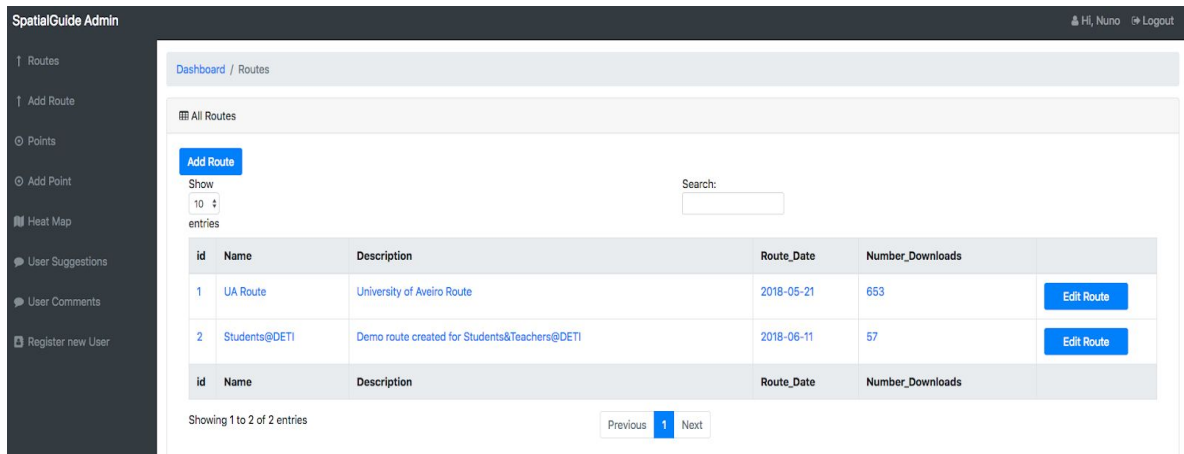
☐ Remember Password

Login

Web Interface

As for the Administrators web interface, we used the html templates based on Bootstrap to create our html views. After the Administrator login, he can find a navbar that provides several options:

- **Routes:** on this option, the Administrator is presented with a list of all the Routes available in the Database with some basic information. It's also available the option of edit each Route attributes or navigate to the Route page with all the it's information. There is also a button that redirects the Administrator to the add Route page.

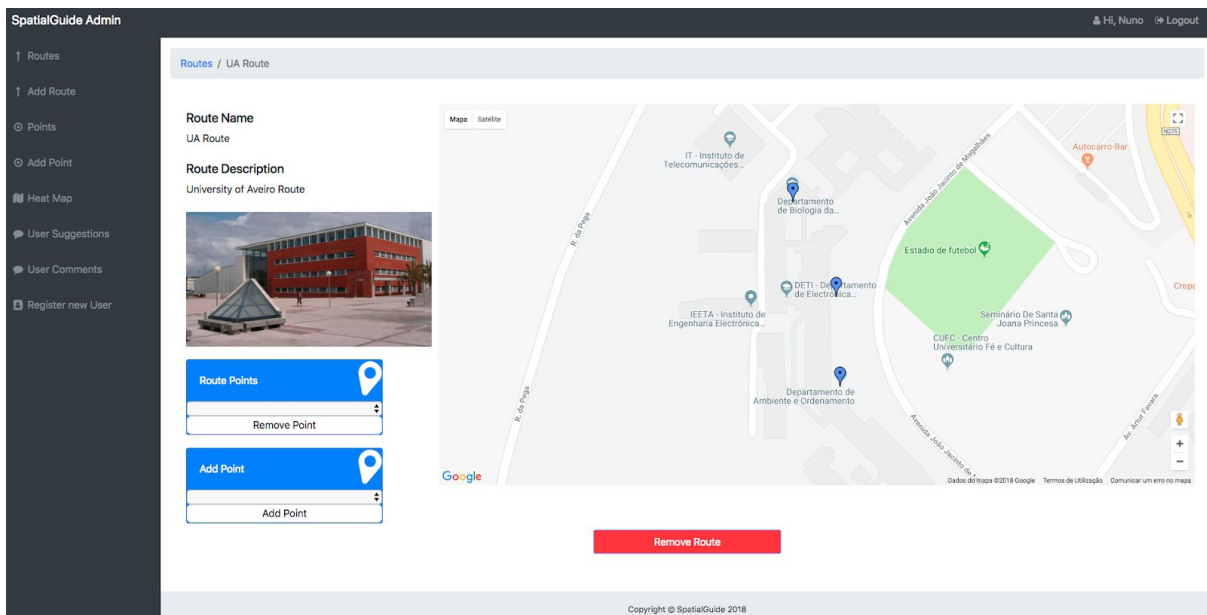


The screenshot shows the 'SpatialGuide Admin' interface. On the left is a dark sidebar with navigation links: Routes, Add Route, Points, Add Point, Heat Map, User Suggestions, User Comments, and Register new User. The main content area is titled 'Dashboard / Routes' and shows 'All Routes'. There is an 'Add Route' button, a 'Show 10 entries' dropdown, and a search bar. A table lists two routes:

id	Name	Description	Route_Date	Number_Downloads	
1	UA Route	University of Aveiro Route	2018-05-21	653	Edit Route
2	Students@DETI	Demo route created for Students&Teachers@DETI	2018-06-11	57	Edit Route

Below the table, it says 'Showing 1 to 2 of 2 entries' and has 'Previous', '1', and 'Next' pagination links.

- **Route page:** In this page the Administrator have access to the Route information, as the points it contains and a map preview on the right. There is also the option of add or remove points from the Route.



The screenshot shows the 'SpatialGuide Admin' interface for a specific route. The sidebar is the same. The main content area is titled 'Routes / UA Route'. It shows the 'Route Name' as 'UA Route' and the 'Route Description' as 'University of Aveiro Route'. There is a photo of the University of Aveiro. Below this, there are 'Route Points' sections with 'Remove Point' and 'Add Point' buttons. On the right is a map showing the route. At the bottom, there is a red 'Remove Route' button. The footer says 'Copyright © SpatialGuide 2018'.

- Add Routes: here it's presented to the Administrator a page with a form where he can insert the information about the new Route he is about to create.

The screenshot shows the 'Add Route' form in the SpatialGuide Admin interface. The form is titled 'Dashboard / Add Route' and includes a sidebar with navigation options: Routes, Add Route, Points, Add Point, Heat Map, User Suggestions, User Comments, and Register new User. The form itself has a header 'Add Route' and contains the following fields:

- Name:** A text input field with the placeholder 'Name'.
- Description:** A text input field with the placeholder 'Description'.
- Image:** A section with a 'Choose file' button and the text 'No file chosen'.
- OK:** A blue button to submit the form.

- Points: displays a list of all the Points in the Database and some basic information about them. On this page there are three buttons that allow the user to create, edit or remove Points.

The screenshot shows the 'Points' page in the SpatialGuide Admin interface. The page is titled 'Dashboard / Points' and includes a sidebar with navigation options: Routes, Add Route, Points, Add Point, Heat Map, User Suggestions, User Comments, and Register new User. The main content area is titled 'All Points' and features a table of points. Above the table, there is an 'Add Point' button, a 'Show 10 entries' dropdown, and a search bar.

id	Name	Url	Description	Point_Date	Latitude	Longitude	
1	DETI Maker Lab	http://www.ua.pt/deti	Maker Lab do DETI	2018-05-21	40.6332269305975	-8.65970148249437	Edit Point Remove Point
2	Instituto de Telecomunicações	http://www.it.pt	Instituto de Telecomunicações description	2018-05-21	40.6341352795372	-8.65997314453125	Edit Point Remove Point
3	Departamento de Ambiente	http://www.ua.pt	Departamento de Ambiente é um departamento próximo do DETI	2018-05-25	40.6326167911655	-8.65903973579407	Edit Point Remove Point
4	Coreto		Dom Pedro City Park	2018-05-28	40.636332429091	-8.65321666055058	Edit Point Remove Point

- Add Point: shows a form and a world map. Here it's possible to create a new Point typing all its attributes and also choosing the Point's coordinates by clicking on the desired location

SpatialGuide Admin

Dashboard / Add Point

+ Add Point

Name

Url

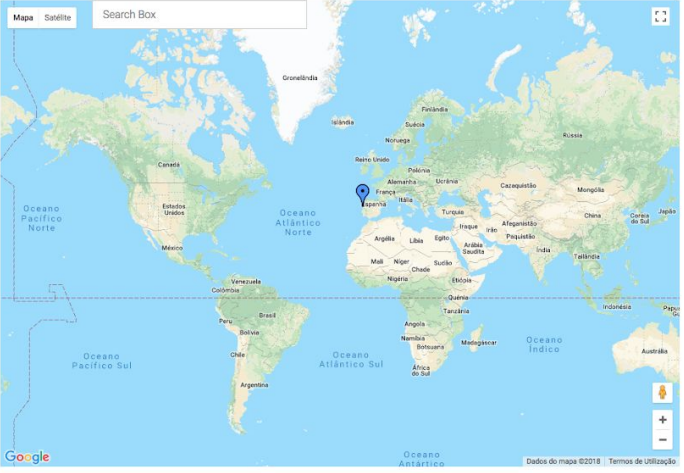
Description

Latitude

Longitude

Image
 No file chosen

Sound
 No file chosen



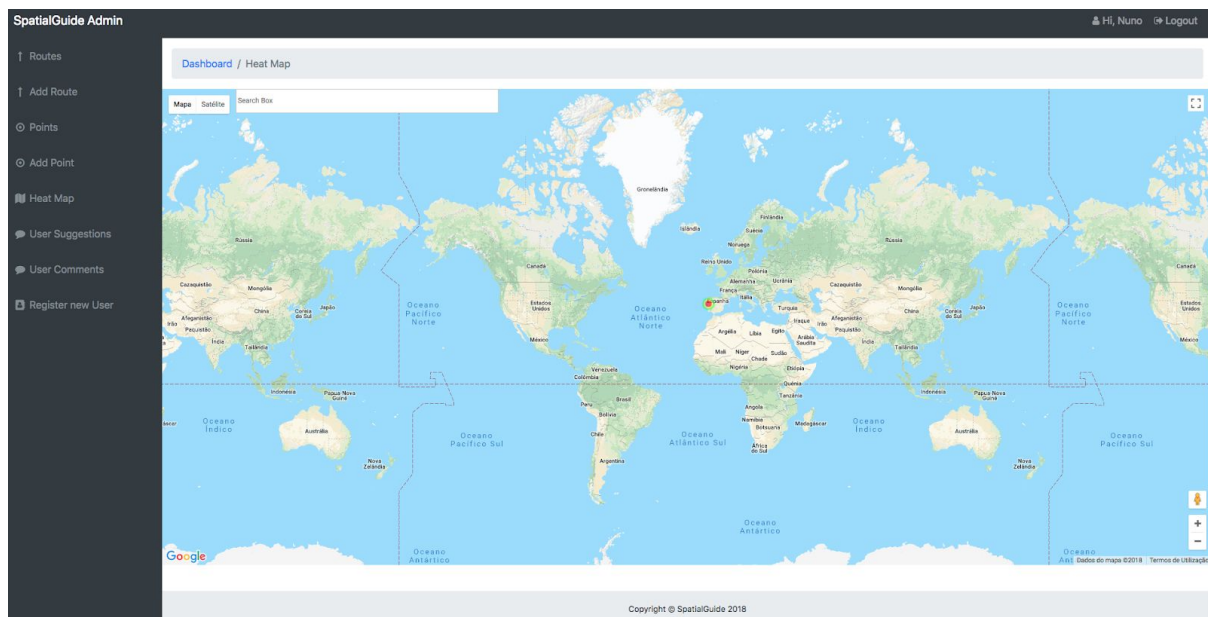
Mapa Satellite Search Box

Oceano Pacifico Norte, Oceano Atlantico Norte, Oceano Atlantico Sul, Oceano Atlantico, Oceano Indico, Oceano Pacifico Sul, Oceano Antartico

Google

Dados do mapa ©2018 | Termos de Utilização

- Heat Map: displays a map where its possible to observe through heat points the most frequented zones by the users while using the Android app.



- User Suggestions: here is shown to the Administrator the locations and comments left by the users who would like to add a Point to the app.

SpatialGuide Admin

Dashboard / User Suggestions

All User Suggestions

id	Latitude	Longitude	Comment
2	40.6336340397073	-8.65576073527336	This place seems to be useful and fun to see!
3	40.6357048737292	-8.65608628839255	teste bom
4	40.6344319506791	-8.65319218486547	interee
5	40.6339930499374	-8.65884963423014	interesting view

id Latitude Longitude Comment

- User Comments: exhibits a list of comments left by the users at a specific Point.

SpatialGuide Admin Hi, Nuno Logout

Dashboard / User Comments

All User Comments

Show 10 entries Search:

id	Comment	User	Point	
11	teste	3	9	Remove Comment
12	Ola	9	8	Remove Comment
13	deti	3	8	Remove Comment
14	Ola	3	8	Remove Comment
15	ola	3	9	Remove Comment
16	tudi	3	8	Remove Comment

id Comment User Point

Showing 1 to 6 of 6 entries Previous 1 Next

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- Register new User: Allows for the register of a new Administrator account.

Finally, on the top right corner, the Administrator can observe the username of its current session and a logout button.

[Dashboard](#) / [Register](#)

Register an Account

Username

Enter Username

First Name

First Name

Last Name

Last Name

Email address

Enter email

Confirm Email

Confirm Email

Password

Password

Confirm password

Confirm password

Register