

6.5.1 Set Up Google Maps and Places API

Now that you have finished helping with your company's STEM project, it's time to get back to working on the travel app for customers. You and Jack want this to feel like a really cool, interactive experience, so you decide to create a variety of heatmaps for the weather data on the website, with some interactive dropdowns for additional information. You will need to write the code that uses the Google Maps and Places API that will create each heatmap.



Google makes available some of the vast sets of tools that power Google Maps, so that any developer, such as yourself, can use the same technologies and datasets in their own applications.

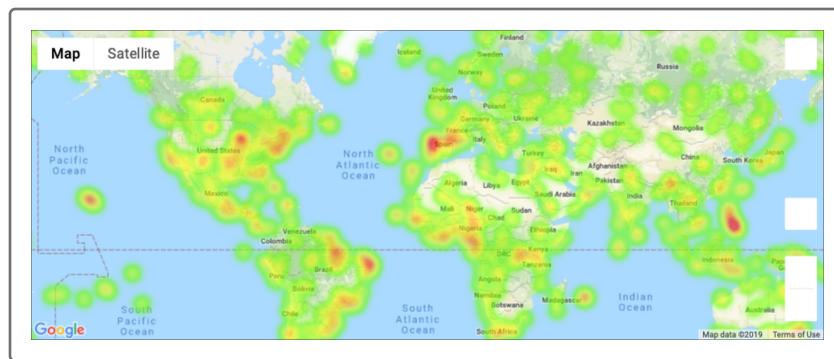
These APIs help developers perform the following tasks:

- Convert latitudinal and longitudinal coordinates into locations on a map.
- Create a heatmap based on the density or weight of a feature, such as an earthquake.
- Identify the hotels or restaurants closest to a given location.

- Determine the distance between two points.

To create custom maps with Google, we will install the gmaps dependency, which is a Jupyter plugin for embedding Google Maps in your notebooks.

Using gmaps, we'll create heatmaps and location markers for hotels within a certain radius of the cities where our customers travel. Below is an example of the type of heatmap we'll create, covering the now-familiar weather parameters: maximum temperature, percent humidity, percent cloudiness, and wind speed.

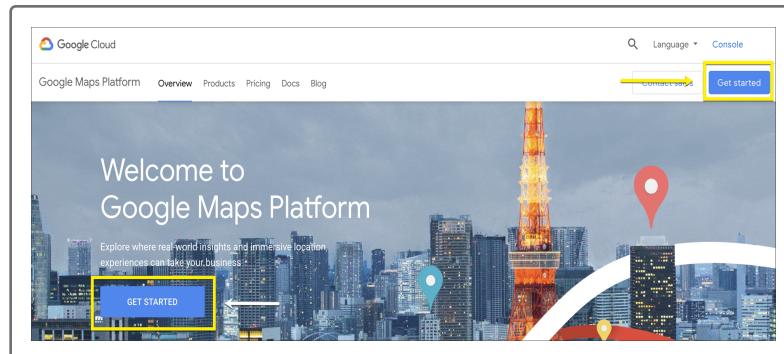


To create this heatmap, we'll need to register for a Google Maps and Places API key on the Google Developer site.

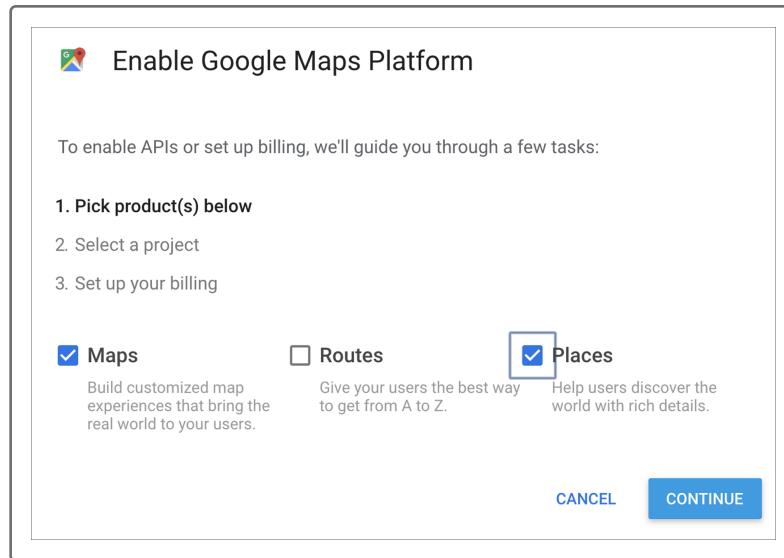
Register for a Google API Key

Follow these steps to register for an API key:

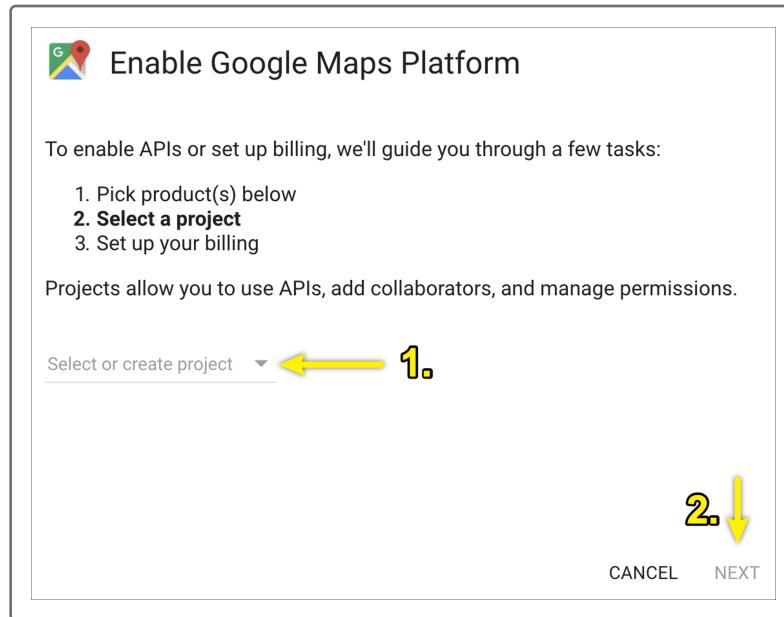
1. Log in to Google with your credentials.
2. Navigate to the [Google Maps Platform page](https://cloud.google.com/maps-platform/) (<https://cloud.google.com/maps-platform/>).
3. Click on either "Get Started" box.



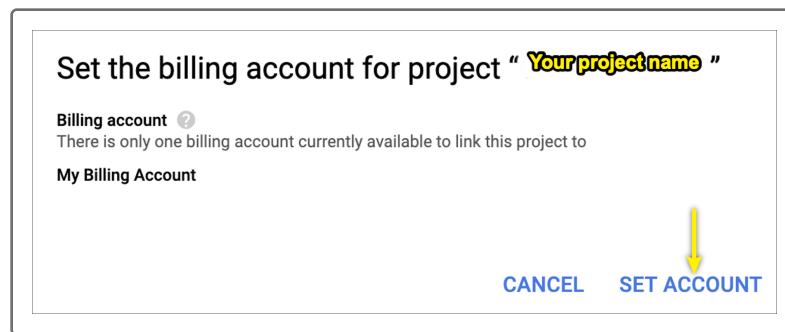
4. Check the "Maps" and "Places" boxes, and then click "Continue."



5. Create a project name, or select one if you have a project, and then click "Next."

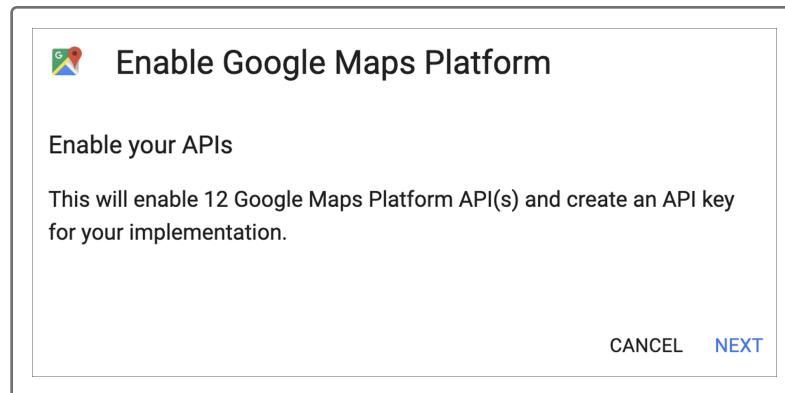


6. You will have to add a credit card to use the Maps and Places API.
Click "Set Account" and follow the instructions.

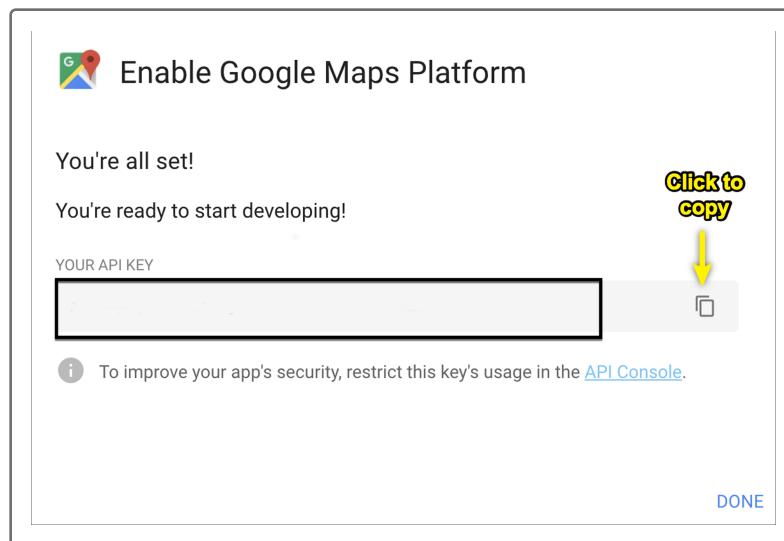
**IMPORTANT**

Any API usage beyond the \$200 credit will be charged to your account. You must add a credit card to use your Google API key. For more information, read about the [Places API Usage and Billing](https://developers.google.com/places/web-service/usage-and-billing) (<https://developers.google.com/places/web-service/usage-and-billing>).

- Once you add the billing information, you'll see the following message. Click "Next."



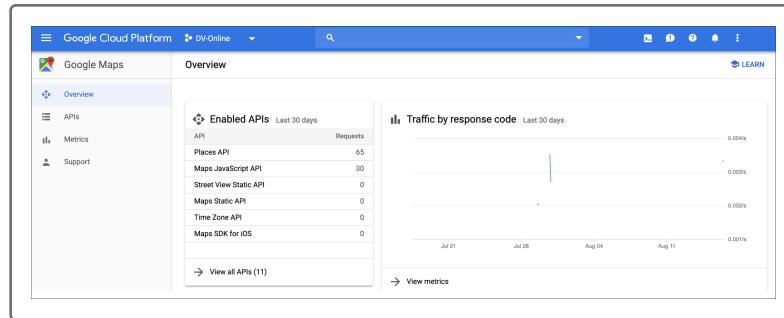
- You will see your API key. Copy your API key and place it in a safe place, and then click "Done."



9. Add the key to your `config.py` file as `g_key`.

```
# Google API Key
g_key = "your Google API key goes here"
```

10. After you click "Done," you'll see your Google Cloud Platform Overview page, where you can track your usage using the menu on the left-hand side.



Next, install the `gmaps` dependency in our PythonData development environment.

Install the `gmaps` Dependency

To install `gmaps`, make sure you have activated your Python development environment. Next, add the following into your command line prompt and press Enter.

```
$ conda install -c conda-forge gmaps
```

Alternatively, you can install gmaps using [pip](#). Follow these steps:

1. First, make sure you have enabled "ipywidgets" widgets extension with the following command.

```
$ jupyter nbextension enable --py --sys-prefix widgetsnbextension
```

2. Install gmaps with the following command:

```
$ pip install gmaps
```

3. Tell Jupyter to load the [widgetsnbextension](#) by running the following command:

```
$ jupyter nbextension enable --py --sys-prefix gmaps
```

Now you are ready to use your Google Maps and Places API key!

NOTE

For more information, see the [documentation on the gmaps dependency](#) (<https://jupyter-gmaps.readthedocs.io/en/latest/tutorial.html>).

6.5:
Create
Heatmap
for
Weather
Parameters