## The City of Calgary Solar Dashboard Setup and Deployment Information

The Dashboard is made up the backend, the frontend, and the databases. The backend is written is python, the frontend in React JS, and we are using SQLite as the database.

To deploy the application, we will need to first deploy the backend. To run go to Solar\_Capstone\flask-server\server.py and run server.py.

Once it is running you will see this in your IDE, please note that the link is not on the internet as it is currently being locally hosted on my IP. To host on the internet (which will need to be done if you want to access it from anywhere, you must host the backend from an online hosting provider. This can be done using AWS or Heroku, or any other hosting platform as well. A black screen with red text

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For the purposes of this tutorial sets continue with locally hosting.

You must take your backend URL, in my case its <http://127.0.0.1:5000>, your case will be different. It is also highlighted in blue above.

Now with the backend URL you must go into Solar\_Capstone\client\package.json. Inside you will find a key called “proxy”, paste your backend URL in there. This will allow the frontend to communicate with the backend.

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Now if you would like to view your application locally you can go to your terminal, cd into the correct working directory of the client. In my case I would type:

cd C:\Users\aliah\Documents\GitHub\Solar\_Capstone\client

followed by

npm install

and lastly

npm start

then you should get this message from your terminal

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And if you go to <http://localhost:3000>

Then you can Interact with the application

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## Hosting it Online

The steps for hosting it online vary for each service provider, and since our app is using databases too it will cost additional to store those values online as well.

Some well known options are Heroku for backend and database and GitHub sites for flask frontend deployment. Another option is AWS, and there is also render. Ultimately there are lots of options, all depending on how much you want to spend. Also note that we are using SQLite databases and some platforms do not accept that so it could be an issue and you might need to switch to Postgres or MySQL. Our recommended approach is to host it locally, that way you will not need to worry about monthly fees, databases, or even security concerns since it will only be available within the cities servers to trusted employees.

## Alternative for Online Hosting: Open on the Internet

For the backend make an account in PythonAnywhere, subscribe to the $5 USD paid monthly tier. Watch this video for a tutorial: <https://www.youtube.com/watch?v=z7dYIKm4np8>

Follow it almost exactly except instead of writing “app” in WSGI file write “server” since our flask app is in server.py

Ensure your file structure matches:

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And continue to fill in the files in the API and Database folders and their subdirectories as well.

**Important: Note the Database files will not be stored in mysite directory.**

From the tutorial you should have made a virtual environment, and for this virtual environment you must make sure that it has install the required python packages for our project and is Python 3.10.

The requirements file can be found at : Solar\_Capstone\requirements.txt

Using your virtual environment now we will set a task

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In the command write:

/home/aliahmed14/.virtualenvs/flaskenv/bin/python3.10 -u /home/aliahmed14/mysite/server.py

**This tells PythonAnywhere to run our database updating script and which environment to always keep it running with. This is crucial for live database updates.**

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**After your changes reload the link and it should be active and can be places in the frontend.**

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The backend and databases are hosted, now we need to host the frontend which is slightly different since it is written in React JS not Python.

For the frontend you first need to make a Heroku account

Watch this tutorial: <https://www.youtube.com/watch?v=leF1xoe-yl8>

We will give you the repository with the frontend files and structure, however just know that the difference in hosting the frontend is that we will not be using the proxy. Instead all of our calls will contain the full link:

We first removed the proxy

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Then replaces all the calls to the full version

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When you host your version of the backend then make sure to swap out the links in all the .js files or else it will not work.

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You need to make it a separate GitHub repository under your account, again make sure you swap out the calls o the backed with your hosted backend.

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Then link your GitHub to your Heroku account as shown in the tutorial.

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Also go into setting and write this into your Config vars

Ensure that Automatic deploys are enabled and then click deploy branch

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Now the Dashboard will be deployed (under settings):

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<https://solar-frontend-public-33897b2160a4.herokuapp.com/ProductionData_fifteen>

You can even buy a domain name for it, but that will be another cost

|  |  |
| --- | --- |
| Backend | Costs $7 CAD / month |
| Frontend | Costs $5 CAD / month |