



ecoHotel Pomelia

Implementing a tracking system of renewable energy recorded in block chain

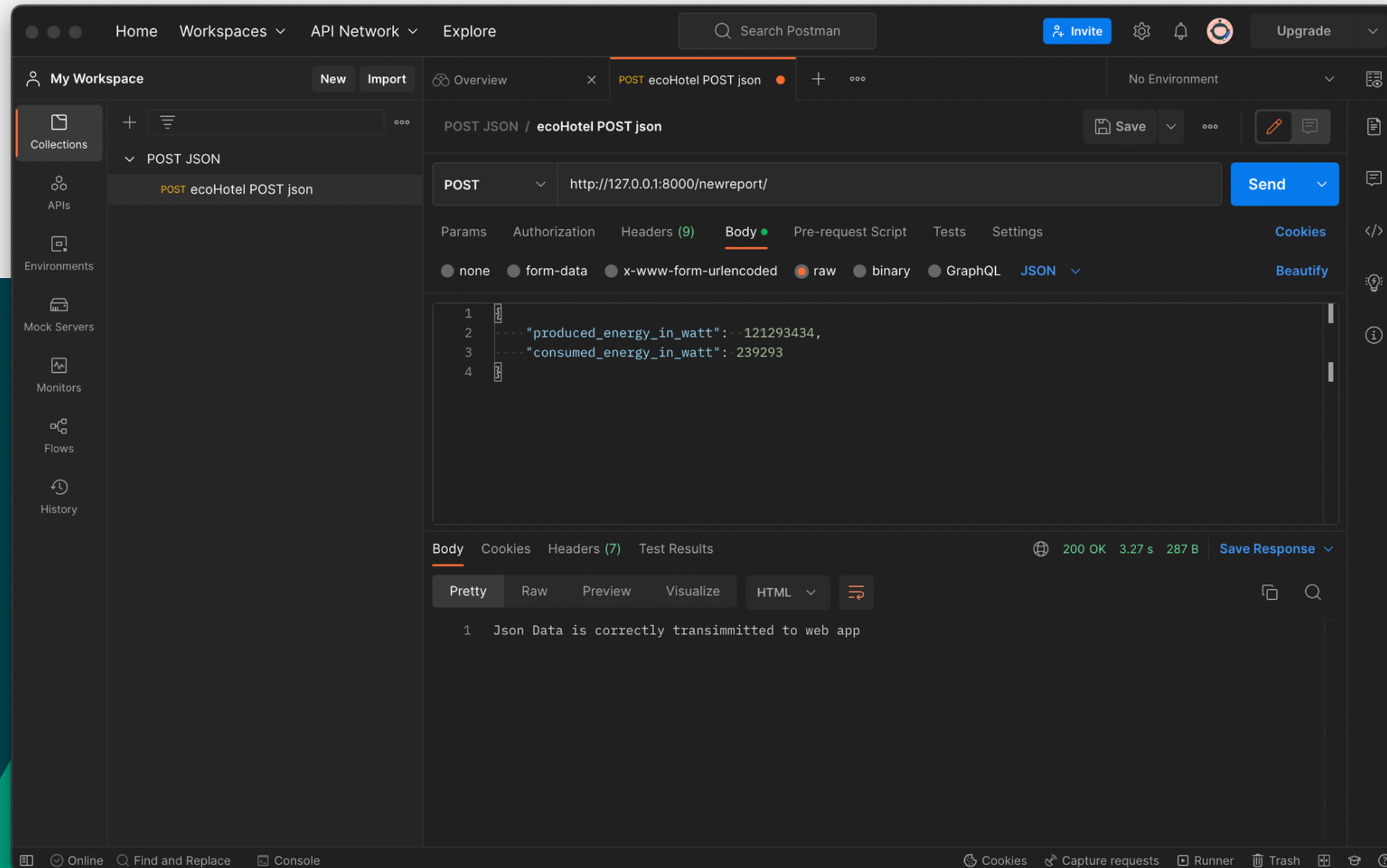
with framework Django, Redis and Goerli ETH testnet



Project request:

- Data entry of produced energy and consumed energy in JSON format with POST method
- Record this information in ETH blockchain
- Create a web app to show this data at the user logged in the system
- An administrator web page that show different analysis data only for the member's administrator
- A log-in system that show if an administrator user log into the web app with different IP

Inbound Data with JSON Post:



Produced and consumed energy uploaded from POSTMAN app:

With a POST request in JSON at the endpoint /newreport (every 24 hours) the data about produced and consumed will be uploaded to the database and will be recorded in the ETH blockchain with a POST request. The user could use POSTMAN app to send this data to the endpoint and receive a message about the successful transfer.

Record informations on ETH blockchain:

Transaction Details

Overview

State

[This is a Goerli Testnet transaction only]

Transaction Hash:

0x6f416b88f13df7c4cb39c47663bf242c92bc75035610e91e9443e17e4b743222

Status:

Success

Block:

8129836

70 Block Confirmations

Timestamp:

16 mins ago (Dec-13-2022 10:03:36 PM +UTC)

From:

0x1ebf0b06fc1413e1f0ee99fcb2e7309a849c801a

To:

0x00

Value:

0 Ether (\$0.00)

Transaction Fee:

0.000000094282269216 Ether (\$0.00)

Gas Price:

0.000000000004090692 Ether (0.004090692 Gwei)

Click to see More

Input data recorded in ETH blockchain:

Each input is recorded on the ETH blockchain and the transaction ID is reported in web app.

To test the system we use the ETH testnet Goerli.

Every transaction id could be explored with a goerly block scan like for example goerli.etherscan.io

Web App: ecoHotel Pomelia

Only for logged User:

The web app ecoHotel Pomelia has a log-in system that permits only the logged user to see the data. The web app is created with framework Django.

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Dashboard for energy consumed and produce by solar panel

You are not logged in. Please [Log In](#)

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Dashboard for energy consumed and produce by solar panel

Log In

Nome utente:

Password:

Web app: ecoHotel home page

For all the users that are log into the web app all the data received is organized in a table ordered by data and shows the information about produced and consumed energy and the id of the transaction in goerli ETH test net

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Dashboard for energy consumed and produce by solar panel

Welcome administrator - [Home](#) - [Administrator Area](#) - [Log Out](#)

Date	Produced energy	Consumed energy	Id Transaction blockchain
Lunedì 12 Dicembre 2022 23:17	121299778	243841	0xb226e5966eba1d51fc29394d8c17209e8707a3b7fcd0a6ae95f99214ccde2e91
Domenica 11 Dicembre 2022 23:17	121298237	242673	0xdd673a89c8499ea6c05948d32534e0b32ead404cb959d4231dce7649c3822c66
Sabato 10 Dicembre 2022 23:16	121296968	241365	0xbc8afb9e4327371508b60388db019754c50c5431a266a05800606ced9ed6dd44
Venerdì 09 Dicembre 2022 23:16	121295075	240380	0x4b056b2391e5ce8401f5c420301401e8fdd863c0408c2451f8b94af8bd238c4b
Giovedì 08 Dicembre 2022 23:12	121293434	239293	0xd879f85a5cdb3c04c73144290bfff13a595b22c86ef3d8aac485b150db558e7c

Web app: ecoHotel administrator page

For only the users that are logged like administrators user in the web app have access to a different page where it's possible to check the total of produced and consumed energy. The user that are not administrators can't access this page.

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Total produced energy	Total consumed energy
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606483492	1207552
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Dashboard for energy consumed and produce by solar panel

Welcome user - [Home](#) - [Administrator Area](#) - [Log Out](#)

This page is reserved only for administration user.

If you are an administrator user and you have a problem to view this page, please contact us by email

Log-in System IP tracker:

Write a message for different IP log-in for administrator user:

A logging system to store the last IP that had access to the platform for a certain administrator user, and it shows a warning message when this is different from the previous one.
Redis, a NoSQL database, was used for this feature.

```
[13/Dec/2022 23:39:59] "GET /accounts/logout/ HTTP/1.1" 302 0
[13/Dec/2022 23:39:59] "GET / HTTP/1.1" 200 621
[13/Dec/2022 23:39:59] "GET /static/stile.css HTTP/1.1" 304 0
[13/Dec/2022 23:39:59] "GET /static/stile.css HTTP/1.1" 304 0
[13/Dec/2022 23:40:00] "GET /accounts/login/ HTTP/1.1" 200 1045
Administrator user administrator logged in with new IP: 127.0.0.1 different to the old IP: 1.3
[13/Dec/2022 23:40:07] "POST /accounts/login/ HTTP/1.1" 302 0
[13/Dec/2022 23:40:07] "GET / HTTP/1.1" 200 2427
```




Thank you for your attention

Link Git Hub for the project:

<https://github.com/matteo-foschi/ecoHotel>

<https://matteofoschi.pythonanywhere.com>

To log in:

Administrator user: admin; administrator Password: start2impact

Normal user: user; Normal user Password: start2impact

Personal Link

<https://www.linkedin.com/in/foschimatteo/>

Matteo Foschi