

BlockChain Final Project

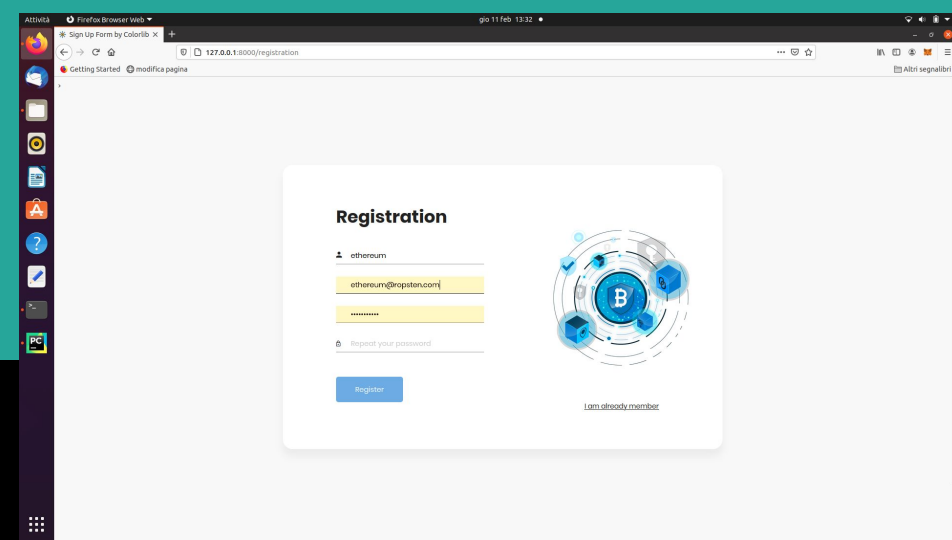
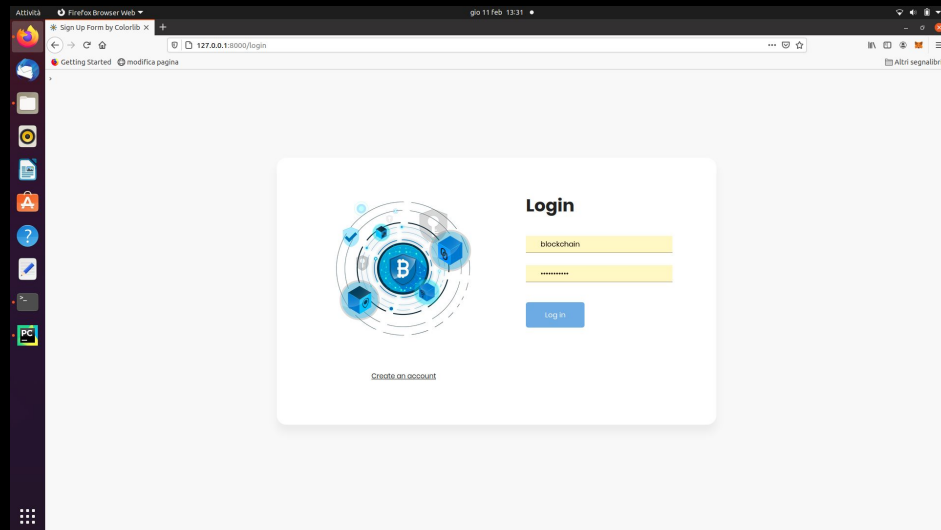
by Giovanni Maria Mazza

Introduction

This is my auction site in which auctions completed are stored in relational database and generate an hash from a JSON file having all the info about it which will be written on the Ropsten Ethereum BlockChain.

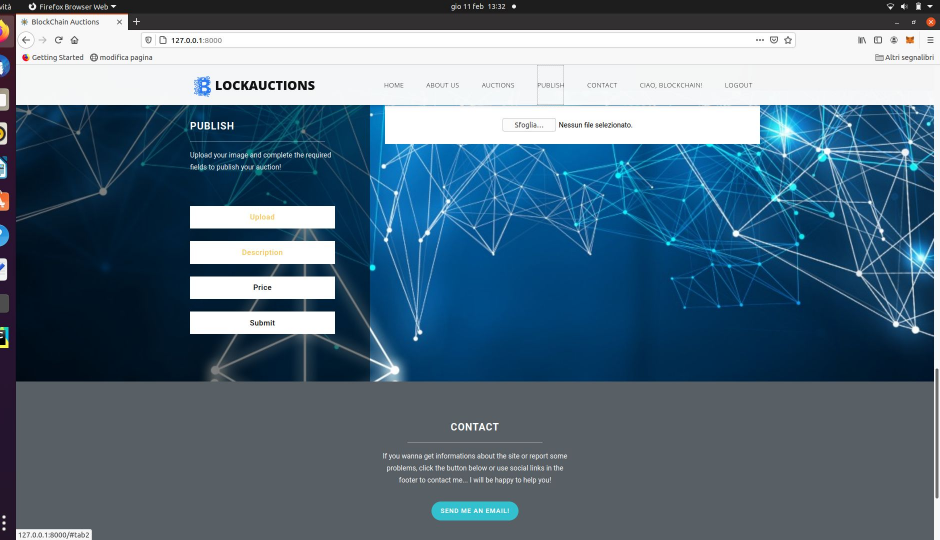
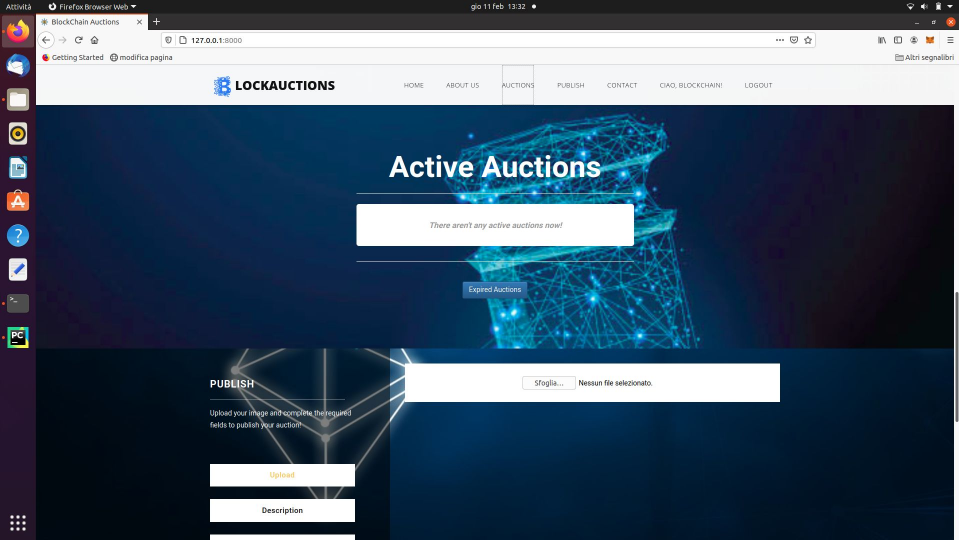
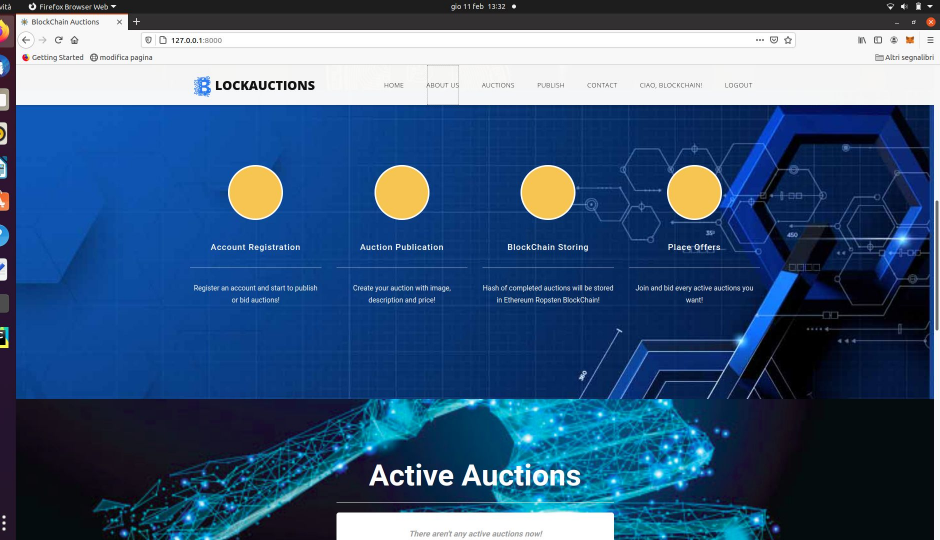
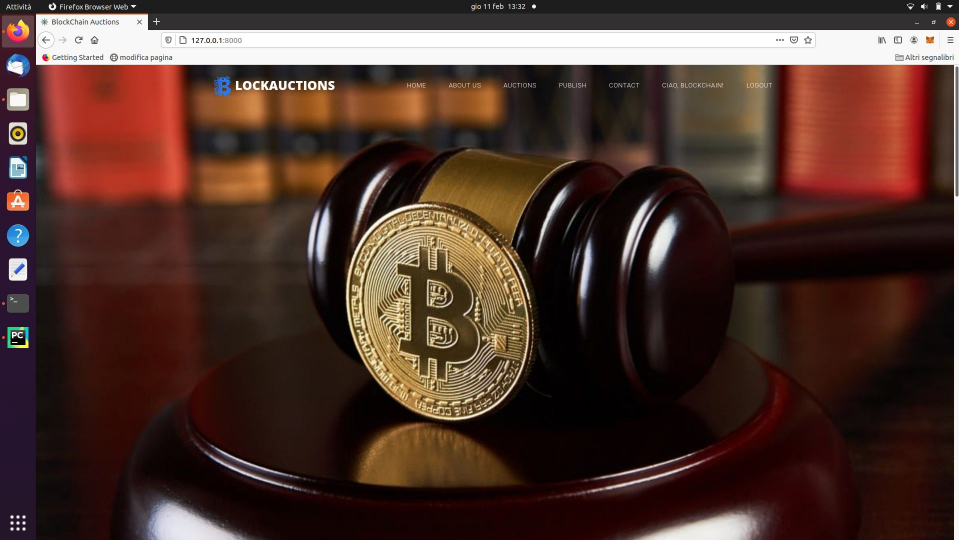
Login / Register Page

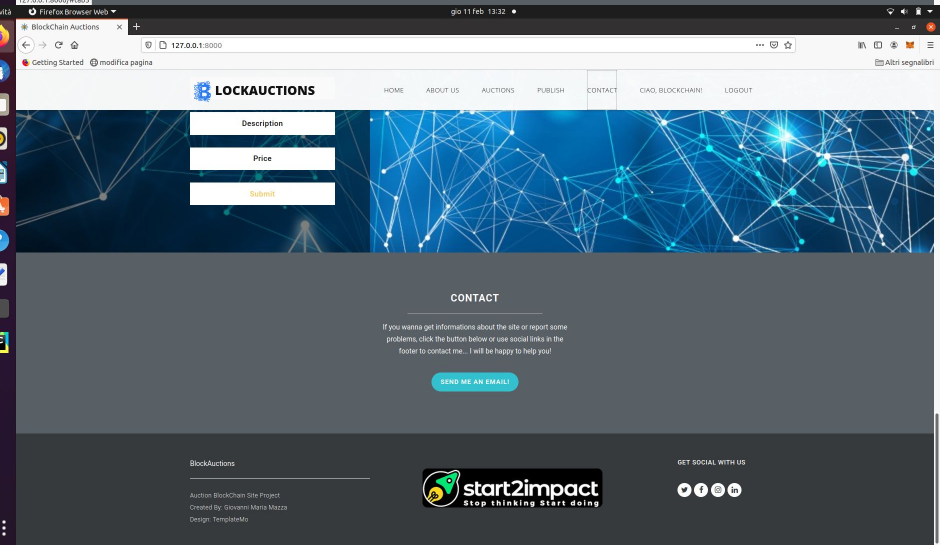
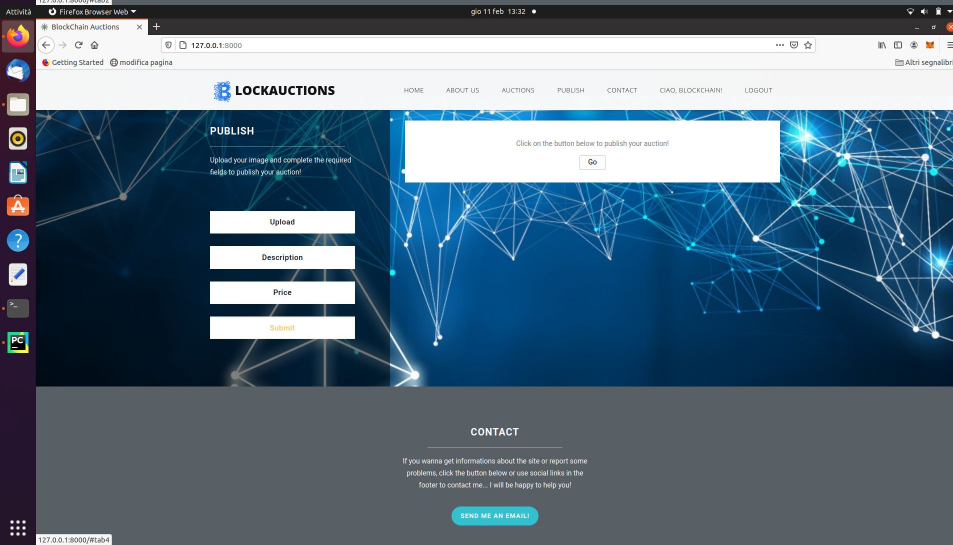
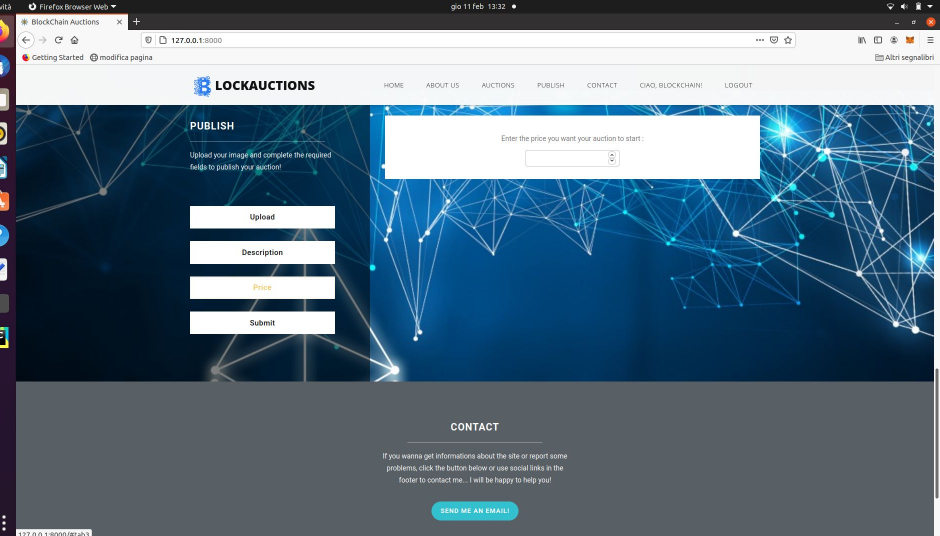
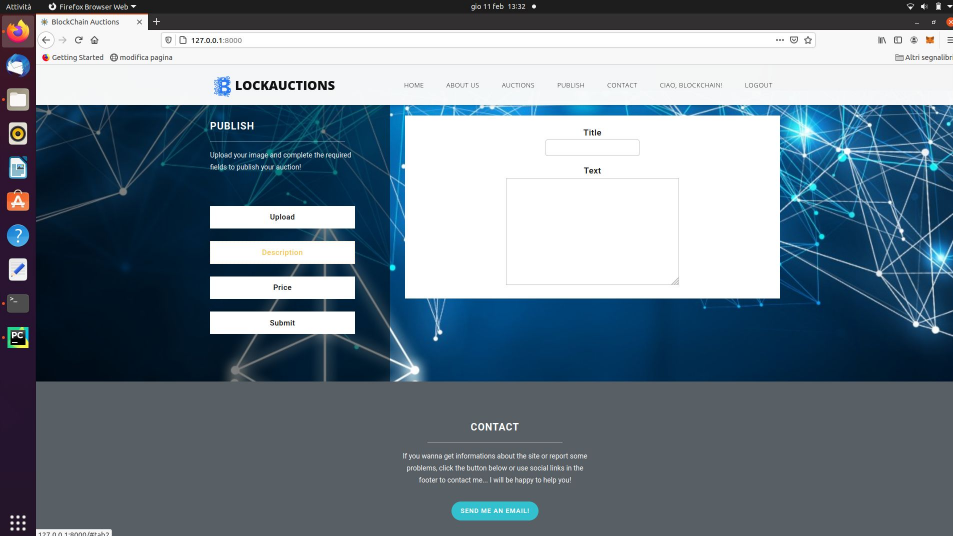
You can create an account and login into the site to see other sections (Auctions and Publish)



Site Sections

You can browse the site or click on the top-navbar links to access specified section. (You can't see Auction and Publish section until you register an account and login the site)





Rest Framework

Every auction is serialized and you can access them on the rest API or with httpie with terminal.


```
Final-Project-Blockchain-Auction-Site
File Edit View Navigate Code Refactor Run Tools VCS Window Help
Final-Project-Blockchain-Auction-Site app views.py
Project: Final-Project-Blockchain-Auction-Site
Terminal: Local Local (2)
[view] mazzacash@mazzacash-HULK-WAYX:~/Final-Project-Blockchain---Auction-5116$ http http://127.0.0.1:8080/auctions/
HTTP/1.1 200 OK
Allow: GET, HEAD, OPTIONS
Content-Length: 416
Content-Type: application/json
Host: Thu, 11 Feb 2021 12:01:08 GMT
Referer-Policy: same-origin
Server: NGINX/1.14.0
Vary: Accept, Cookie
X-Content-Type-Options: nosniff
X-Frame-Options: DENY

{
  "list": "http://127.0.0.1:8080/auctions/list/"
}

[view] mazzacash@mazzacash-HULK-WAYX:~/Final-Project-Blockchain---Auction-5116$ http http://127.0.0.1:8080/auctions/list/
HTTP/1.1 200 OK
Allow: GET, POST, PATCH, DELETE, HEAD, OPTIONS
Content-Length: 416
Content-Type: application/json
Host: Thu, 11 Feb 2021 12:01:09 GMT
Referer-Policy: same-origin
Server: NGINX/1.14.0
Vary: Accept, Cookie
X-Content-Type-Options: nosniff
X-Frame-Options: DENY

{
  "advertiser": 1,
  "endPrice": "2021-02-11T12:30:16.637748Z",
  "endPrice": 1000.0,
  "hash": "4c8a3c35a7e30a084f8c57a58c8b44c7b2b0a47112b0e114307650741f",
  "id": 1,
  "image": "http://127.0.0.1:8080/media/images/3.jpg",
  "startDate": "2021-02-11T12:30:16.636481Z",
  "startDate": 100.0,
  "status": false,
  "text": "Ethereum Ropsten",
  "title": "Auction 1",
  "type": "RxC5222f4b8797b7f08b0ac825c399248443d58ac3ab895276a94ac6c04",
  "winner": 3
}
```

Firefox Browser Web

Blockchain Auctions x ropten Transaction h... x Api Root - Django REST F... x

127.0.0.1:8080/auctions/

Getting Started modifica pagina

Django REST framework

Api Root

The default basic view for DefaultRouter

GET /auctions/

HTTP/1.1 200 OK
Allow: GET, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

```
{
  "list": "http://127.0.0.1:8080/auctions/list/"
}
```

```
Final-Project-Blockchain-Auction-Site
File Edit View Navigate Code Refactor Run Tools VCS Window Help
Final-Project-Blockchain-Auction-Site app views.py
Project: Final-Project-Blockchain-Auction-Site
Terminal: Local Local (2)
[view] mazzacash@mazzacash-HULK-WAYX:~/Final-Project-Blockchain---Auction-5116$ http http://127.0.0.1:8080/auctions/list/2/
HTTP/1.1 200 OK
Allow: GET, POST, PATCH, DELETE, HEAD, OPTIONS
Content-Length: 416
Content-Type: application/json
Host: Thu, 11 Feb 2021 12:01:07 GMT
Referer-Policy: same-origin
Server: NGINX/1.14.0
Vary: Accept, Cookie
X-Content-Type-Options: nosniff
X-Frame-Options: DENY

{
  "advertiser": 2,
  "endPrice": "2021-02-11T12:30:16.637748Z",
  "endPrice": 1000.0,
  "hash": "4c8a3c35a7e30a084f8c57a58c8b44c7b2b0a47112b0e114307650741f",
  "id": 2,
  "image": "http://127.0.0.1:8080/media/images/3.jpg",
  "startDate": "2021-02-11T12:30:16.636481Z",
  "startDate": 100.0,
  "status": false,
  "text": "Ethereum Ropsten",
  "title": "Auction 1",
  "type": "RxC5222f4b8797b7f08b0ac825c399248443d58ac3ab895276a94ac6c04",
  "winner": 3
}

[view] mazzacash@mazzacash-HULK-WAYX:~/Final-Project-Blockchain---Auction-5116$
```

Firefox Browser Web

Blockchain Auctions x ropten Transaction h... x Auction List - Django REST... x

127.0.0.1:8080/auctions/list/

Getting Started modifica pagina

Django REST framework

Auction List

GET /auctions/list/

HTTP/1.1 200 OK
Allow: GET, POST, HEAD, OPTIONS
Content-Type: application/json
Vary: Accept

```
{
  "id": 2,
  "title": "Auction 1",
  "text": "Ethereum Ropsten",
  "startDate": "2021-02-11T12:30:16.636481Z",
  "startDate": 100.0,
  "status": false,
  "image": "http://127.0.0.1:8080/media/images/3.jpg",
  "startDate": "2021-02-11T12:30:16.636481Z",
  "startDate": 100.0,
  "hash": "4c8a3c35a7e30a084f8c57a58c8b44c7b2b0a47112b0e114307650741f",
  "type": "RxC5222f4b8797b7f08b0ac825c399248443d58ac3ab895276a94ac6c04",
  "advertiser": 2,
  "winner": 3
}
```

Flow data HTML form

Title

Text

StarPrice

EndPrice

Status

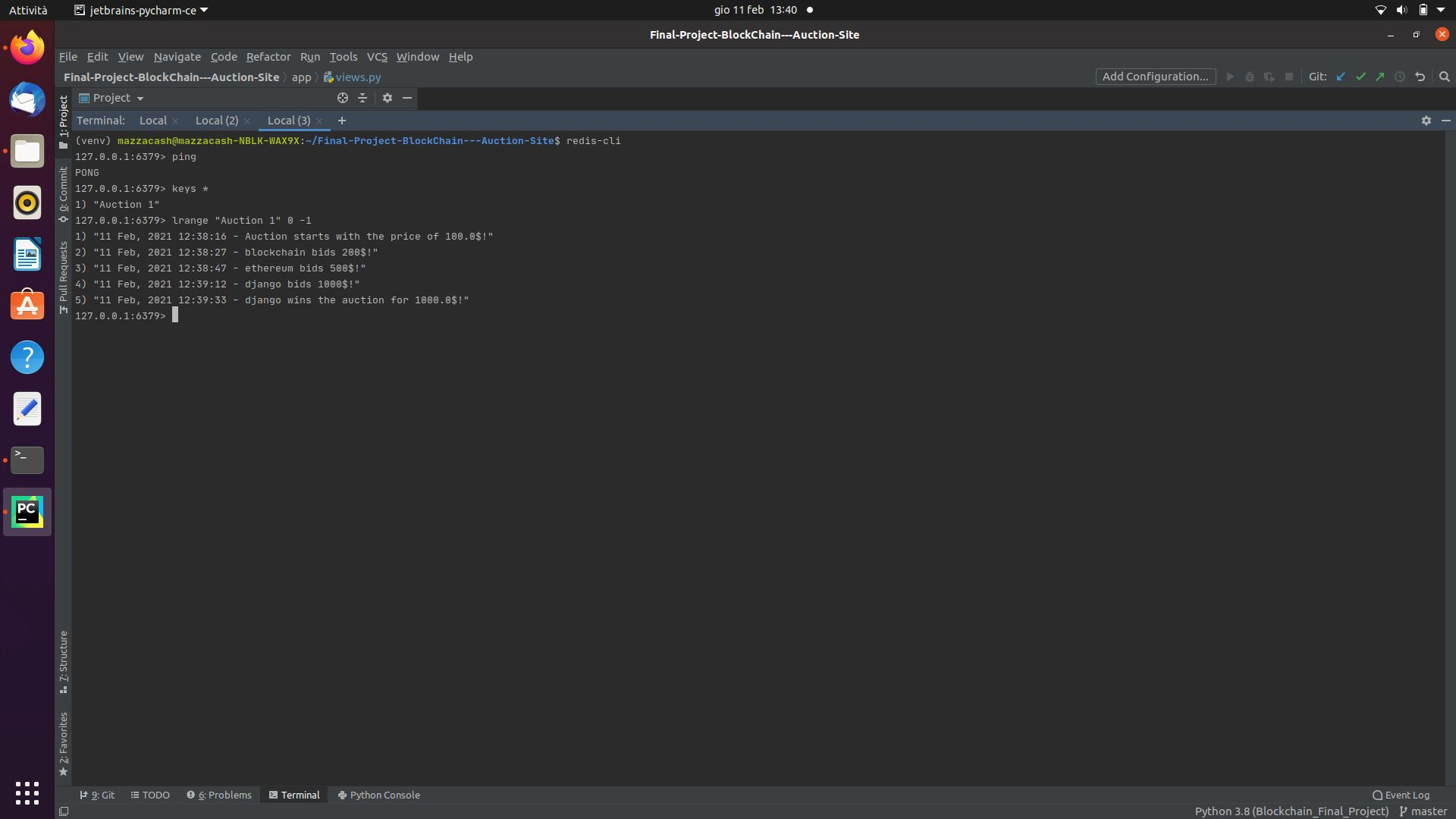
Image

Sfoglia... Nessun file selezionato.

Redis



Informations about bids are stored in Redis so server can't slow down in case of large influx of users.

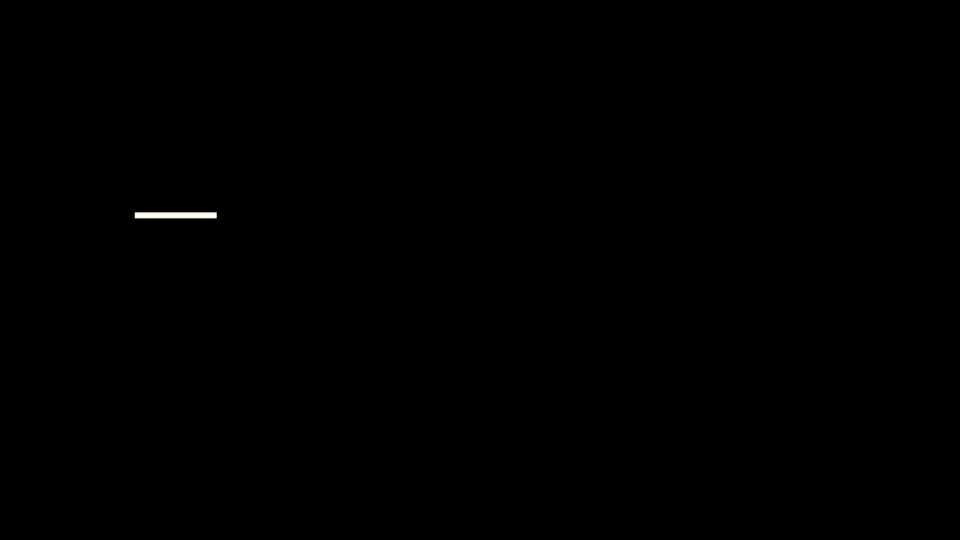


```
(venv) mazzacash@mazzacash-NBLK-WAX9X:~/Final-Project-BlockChain---Auction-Site$ redis-cli
127.0.0.1:6379> ping
PONG
127.0.0.1:6379> keys *
1) "Auction 1"
127.0.0.1:6379> lrange "Auction 1" 0 -1
1) "11 Feb, 2021 12:38:16 - Auction starts with the price of 100.0$!"
2) "11 Feb, 2021 12:38:27 - blockchain bids 200$!"
3) "11 Feb, 2021 12:38:47 - ethereum bids 500$!"
4) "11 Feb, 2021 12:39:12 - django bids 1000$!"
5) "11 Feb, 2021 12:39:33 - django wins the auction for 1000.0$!"
127.0.0.1:6379>
```

Blockchain Storing

When auction is completed, a script generates a JSON file with all the info about it and store relative hash in a transaction on the Ethereum Ropsten.

```
File Edit View Navigate Code Refactor Run Tools VCS Window Help
Final-Project-Blockchain-Auction-Site app views.py
Project +
Terminal: Local (2) +
[view] mazzacost@mazzacost:~$ cd /home/mazzacost/Final-Project-Blockchain-Auction-Site/
Python 3.8.6 (default, Sep 25 2020, 09:36:53)
[66f18.2.8] on linux
Type "help()" for more information.
(InteractiveConsole)
>>> from app.models import Auction
>>> auction = Auction.objects.all()
>>> QuerySet [Auction: Auction 1]
>>> auction = Auction.objects.get(title="Auction 1")
>>> auction.id
1
>>> '0x5222fa08767bfc0b0ac825c3592348ff3d586c3a8b09527f609646bc4'
>>> auction.hash
'0x0a0c35a17a30a08048f8c579586c8846c7628ba71128ba6114307658741ff'
>>>
```



Firefox Browser Web

BlockChain Auctions x Ropsten Transaction History

Getting Started modifica pagina

https://ropsten.etherscan.io/tx/0x5222fa08767bfc0b0ac825c3592348ff3d586c3a8b09527f609646bc4

Ropsten Testnet Network Home Blockchain Tokens Mac Python

Transaction Details

Overview State

[This is a Ropsten Testnet transaction only]

- Transaction Hash: 0x5222fa08767bfc0b0ac825c3592348ff3d586c3a8b09527f609646bc4
- Status: Success
- Block: 9642390 12 Block Confirmations
- Timestamp: 3 mins ago (Feb-11-2021 12:39:33 PM +UTC)
- From: 0x2995429476a495069278b0f6d7d8400096
- To: 0x00
- Value: 0 Ether (\$0.00)
- Transaction Fee: 0.000015488066 Ether (\$0.000006)
- Gas Price: 0.00000001432473965 Ether (1.432473965 Gwei)
- Gas Limit: 100,000
- Gas Used by Transaction: 22,024 (22.02%)
- Nonce: 15
- Input Data: 0x0a0c35a17a30a08048f8c57a506c8846c7628ba71128ba6114307658741ff

Click to see Less

Conclusion

This is my auction site, I hope you enjoy it... Below that's my GitHub repository, thanks for watching it!

<https://github.com/mazzacash94/Final-Project-BlockChain---Auction-Site>