Wallet Token Stats

You need to write backend for the simple frontend that we have carefully prepared for you.

Run the following command to see how it looks like

```
python3 server.py
```

and open http://localhost:8050 in your browser.

What you need to do is write function `get_data` in `data.py` that extracts statistics for wallet-token pair and plots `Trade history` and `PNL history` graphs.

P.S. Unfortunately gitflic doesn't support latex formulas, so we generated README.pdf from this README.md for you.

Statistics description

`Trade history` is the plot that has `block_number` as x-axis and quote in WETH (a.k.a. `native_quote`) as y-axis and has vertical lines that represent in-transfers (green vertical lines) and out-transfers (red vertical lines).

For you fun you can find wallets with good perfomance (buy low, sell high). We call them sheikhs =). You can come up with your own approach for identification of such wallets.

`PNL history` is the plot that has `block_number` as x-axis and `unrealized PNL` as y-axis.

PNL per wallet-token pair

We suggest to use the following formula for `unrealized PNL`

$$\sum_{i=1}^{N} b_{t_i}(p_{t_{i+1}} - p_{t_i}),$$

where b_t is the token balance of the given wallet as of block t, p_t is the `native_quote` quote as of block t, the sequence $\{t_i\}_{i=1}^{N}$ are the blocks at which token transfers occured and t_{N+1} is the latest block for which we calculate `unrealized PNL`.

Getting data from SQL database

We prepared Clickhouse sql database which you may use to derive all the neccessary data. We prepared short introductory video (`TODO: ADD LINK`) for your quick start.

If you want to run sql queries from Python code it is reasonable to use clickhouse-driver library:

```python
from clickhouse_driver import Client

clickhouse_url = "clickhouse://10.16.68.34:9000/ethereum"
client = Client.from_url(clickhouse_url)

sql_query = "SELECT * from transactions WHERE block_number = 16000000"
client.execute(sql_query)
```