

AUTONOMOUS TRADING BOT

BACKGROUND

With recent advancements in deep learning frameworks and access to faster gpus, training complex models that can predict on time series data has opened new avenues to explore stock market trading. We are using models that have a memory component in them, such as **LSTM** (**Long Short Term Memory**) to make predictions and trades on the stock market. The overall objective for the application is to achieve the return target provided by the analyst while **configuring the bot** and **minimize loss** according to the risk factor provided. The potential users of this application would be **trade analysts or managers** who will use the bot to run its instances according to their requirements.

SYSTEM FEATURES

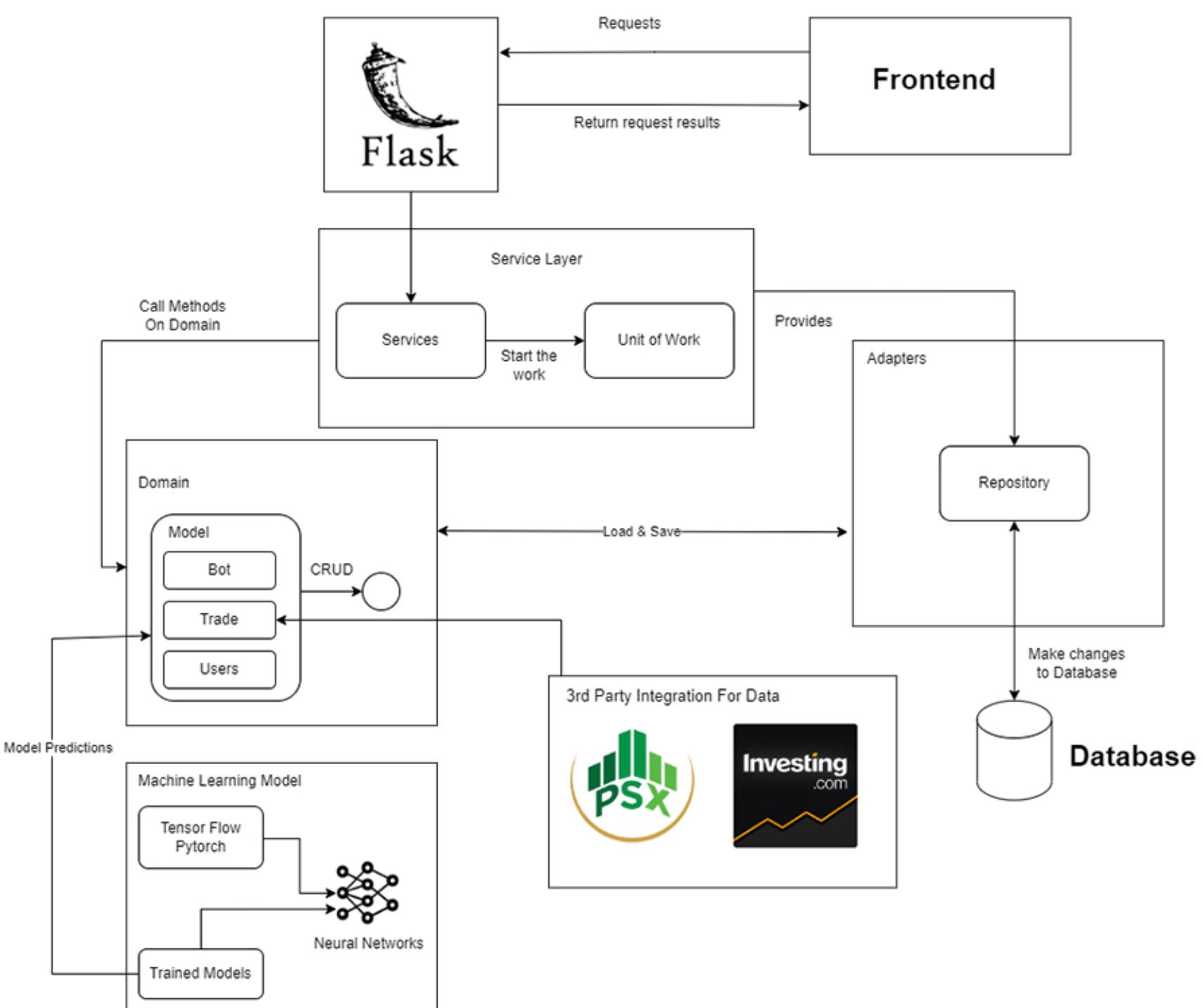
Frontend-Backend:

- Authentication with JWT
- Dashboard for both investors and analyst
- Configure bots and manage them
- View Reports

Backend - Machine Learning:

- LSTM model to predict (high, low, close, open, ATR) after 15 days
- Integration on model at backend command side

BACKEND MODEL



TRADING REPORT

Bot ID: 1aa4003b-5cda-4057-9f3f-815430fd1f8f

Configuration Parameters:

State: IDLE
Amount Invested: 1000
Risk Appetite: HIGH
Target Return: 10%
Stock: NESTLE

START TERMINATE VIEW TRADES

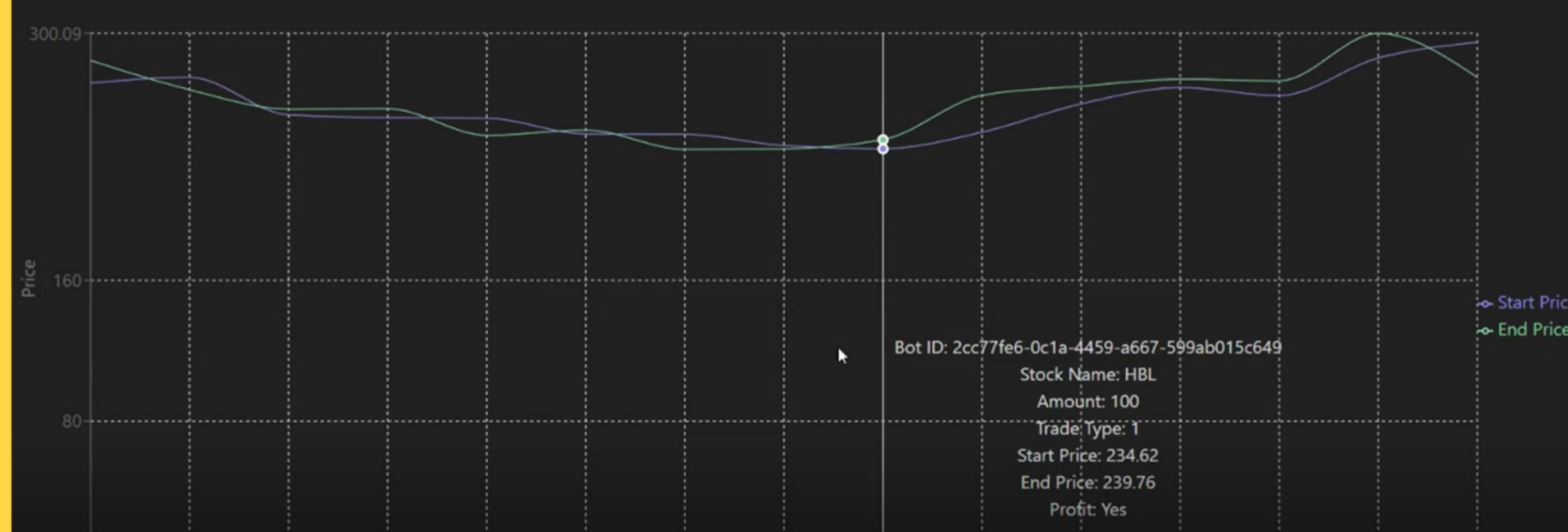
Bot ID: 0739a318-1c17-46b9-a141-a1f8530c8186

Configuration Parameters:

State: TERMINATED
Amount Invested: 800.0
Risk Appetite: MID
Target Return: 15.0%
Stock: ENGRO

START TERMINATE VIEW TRADES

Trading History Graph



Bot Performance

ID	INITIAL INVESTMENT(PKR)	CURRENT VALUE(PKR)	IN PROFIT ?	LOSS(PKR)	% LOSS
e16dfe33-4f87-431c-ab40-b9e46583e729	1000.0	953.5599999999997	No	-46.44	-4.64%

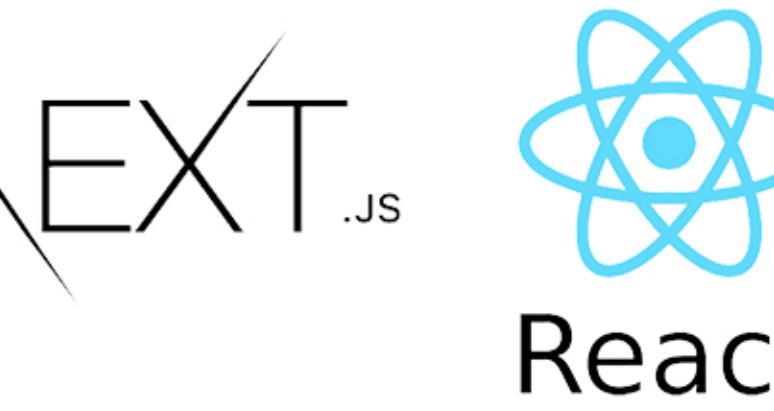
Trade History

ID	AMOUNT	START PRICE	STARTED AT	TRADE TYPE	ENDED AT	END PRICE	PROFIT ?
be0a6fa2-9f6c-4df6-9485-e52a9ba02d4c	100	271.89	Mon, 04 Apr 2022 01:00:00 GMT	Call	Wed, 20 Apr 2022 01:00:00 GMT	284.69	No
521038be-178c-4a28-90d4-0eef5569753e	100	275.18	Wed, 04 May 2022 01:00:00 GMT	Put	Sun, 29 May 2022 01:00:00 GMT	268.08	No
88e3a23a-7b73-43df-af42-41a1041de7e6	100	253.81	Wed, 22 Jun 2022 01:00:00 GMT	Put	Tue, 28 Jun 2022 01:00:00 GMT	257.09	Yes
86d319b4-41dc-4c26-8aa6-5a5985332d56	100	252.3	Mon, 04 Jul 2022 01:00:00 GMT	Put	Tue, 12 Jul 2022 01:00:00 GMT	257.4	Yes
9c0933d0-0d77-4b11-afa1-dc22754260ca	100	251.97	Sat, 16 Jul 2022 01:00:00 GMT	Put	Mon, 08 Aug 2022 01:00:00 GMT	242.23	No

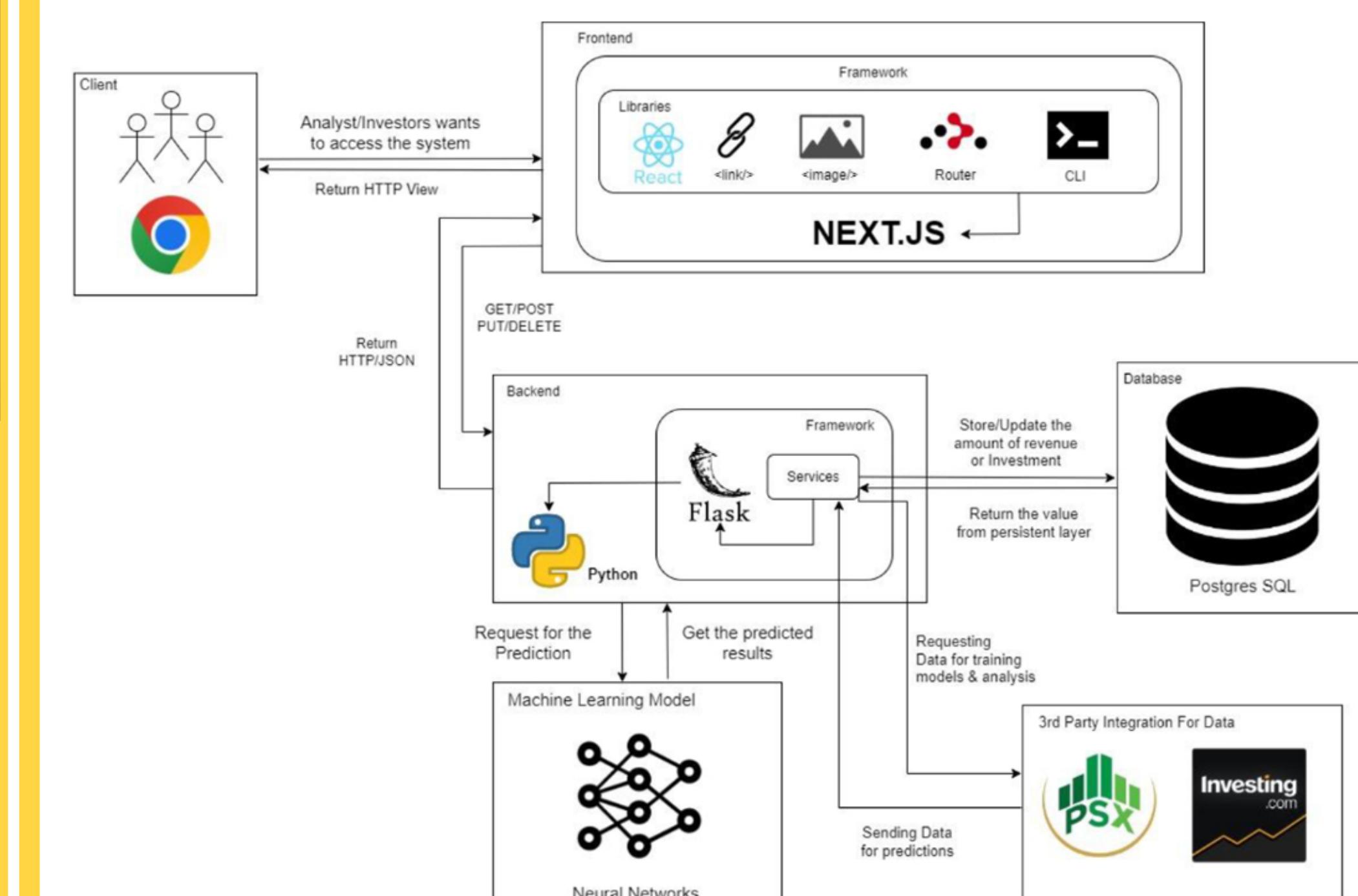
GROUP DETAILS

- Ahmed Tahir Shekhani (23100197)
- Ali Asghar (23100198)
- Syed Talal Hasan (23100176)
- Suleman Mahmood (23100011)

TECHNOLOGIES



ARCHITECTURE



FUTURE WORK

- Adding sentiment analysis as an additional parameter to make prediction on the stock market
- Create a unified model that decides which stock to trade on
- Integrate crypto trading on the platform
- Allow model to have even greater granularity while training based on trader preference