

CryptoBot with Binance

Program : Data Engineer

Difficulty : 8/10

Description détaillée :

Nowadays, the world of crypto is starting to take on an important and growing role. These are simply quite volatile and unstable financial markets based on Blockchain technology.

The main goal of this project is to create a trading bot based on a Machine Learning model that will invest in crypto markets.

Step	Description	Goal	Modules / Masterclass / Templates	Conditions of validation
1	Collecting the data	<p>Collecting two types of data through the Binance API using a streaming architecture.</p> <p>Thanks to this API, we can retrieve information on the prices of different markets (BTC-USDT, BTC-ETH, ...).</p> <p>The goal will be to create a generic data retrieval function in order to have data from any market.</p> <p>It will also be necessary to create a pre-processing script to reorganise the data coming out of the stream so that it is clean.</p> <p>Recovering historical data, pre-processed to train our future model</p>		<p>Treatment explanation file (doc / pdf)</p> <p>JSON file of the data</p>
2	Data modeling	<p>It is a question of choosing the most suitable storage solution.</p> <ul style="list-style-type: none"> - 2 SQL tables, one for historical data and one for streaming data 	<p>142 - SQL</p> <p>Elasticsearch</p>	<p>A relational database</p> <p>UML Diagram</p> <p>A file who creates</p>

		- A Mongo/Elastic DB with 2 collections: one for stream data and one for data	143 - MongoDB	and queries the SQL database . Same files for a Elastic/Mongo/ DataBase
3	Data consumption	(Implement a Kibana Dashboard that would allow querying the streaming db to follow a live evolution of the course.)	ElasticSearch	Dashboard Kibana
		Use a Machine Learning algorithm applied to finance that will return a decision to buy or not. (Which strategy for selling?) Go further: prediction of earnings Make an API to test the ML model and why not request historical data	DE121 FastAPI	ML Notebook API FastAPI
		Put all your app on Docker Docker-Compose on several containers + network + API for port	Docker	docker-compose yaml file
4	Automation of flows	You will need to request the API daily via Airflow. We can't use Airflow for streaming data, but you can test Nifi.	Airflow, (Nifi)	Python file for Airflow or Nifi Setup
5	Defense	Demonstrate their application and explain the reasoning behind their project.	X	Defense Documentation

Bibliography :

<https://www.binance.com/fr/binance-api>

<https://binance-docs.github.io/apidocs/spot/en/#change-log>

Many trading bots on youtube or on github