Cryptocurrency Price Analysis using Machine Learning and Artificial Intelligence

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Abstract: - The role of Cryptocurrency has been extremely necessary in reshaping the national economy thanks to its increasing in style appeal and worldwide acceptance. tons of individuals have began to build investments in Cryptocurrency, however the changing options ,uncertainty, and sure thing of Cryptocurrency area unit still principally unknown, that dramatically risks the investments. it's a matter of making an attempt to know the factors that influence the worth formation. during this study, we have a tendency to use advanced computing frame works of Long Short Term Memory (LSTM) and perennial Neural Network (RNN) to predict the value of various cryptocurrencies. analysis of those algorithms is administrated to see higher prediction to research the value dynamics of different cryptocurrencies together with Bitcoin, Ethereum, and Ripple. However, the reason of the sure thing might vary depending on the look of the machine-learning model that is enforced

***Key Words*- Long Short Term Memory, Recurrent Neural Network, Cryptocurrency, Machine Learning**

1. INTRODUCTION

The first decentralised digital currency or cryptocurrency, that was introduced in 2008 in an exceedingly paper by author Satoshi Nakamoto,was Bitcoin [2]. Bitcoin is one in every of the foremost valuable cryptocurrency within the world. A cryptocurrency in essence may be a digital plus meaning it exists in an exceedingly binary format and comes with the correct to use and also the knowledge that don't possess that right don't seem to be thought of assets, and it's designed to figure as a technique of exchange that uses strong cryptography to make sure reliable monetary transactions, and substantiate the transfer of assets. Once the discharge of Bitcoin in 2009, over 4000 different variants of Bitcoin that square measure referred to as "altcoins" are created [6].

Over the past few months, the cryptocurrency market has competent huge volatility [6]. Volatility as a proportion useful

fluctuations, it considerably affects exchange processes and investment selections even as on various determinative and proportions of elementary risk [4]. the value of all totally different cryptocurrencies fluctuates merely sort of a stock although in associate degree surprising method.

There area unit varied calculations used on money exchange data for worth forecasts. Nevertheless, the parameters influencing cryptocurrencies area unit extraordinary. during this manner it's vital to forecast the estimation of various cryptocurrencies so the right call may be created [1]. The price of those cryptocurrencies does not depend on business occasions or mediating the government, not in any respect like securities exchanges. Hence, to predict the value we tend to feel it's vital to use AI innovation to foresee the price of various cryptocurrencies [3].

2. EXISTING SYSTEM:

Cryptocurrency is without doubt one amongst the foremost advanced and volatile types of investments. fortuitously, because of growth within the development towards cryptocurrency, folks ar currently ready to build their portfolio distributed and new investors ar rising. Moreover, folks will use not solely computers however additionally varied varieties of hand-held devices, e.g., smartphones and tablets, to surf websites and varied applications thus on purchase simply as data technology advances recently. The developed system permits predicting a cryptocurrency rate. Machine learning and data processing is employed for prognostication this rate. LSTM, RNN, call tree, ANN and regression square measure wont to enable coaching of bitcoin costs as statistic information with efficiency. In this system, it's potential to predict the course of a cryptocurrency for varied time intervals. The time taken for compilation of the model and their prediction accuracy is completely different for various algorithms. though existing efforts on Cryptocurrency worth analysis and prediction square measure restricted, many studies are about to perceive the Cryptocurrency statistic and build applied mathematics models to recreate and predict dynamics of worth [5]

Proposed Method:

Bitcoin's most exceptional feature is its spreading, which, because of its blockchain, utterly eliminates the ability of ancient banking and financial establishments. to some extent, network options. what is more, Bitcoin's electronic payment system relies on cryptological proof instead of mutual trust, as its group action history cannot be modified while not redoing it everywhere once more. All blockchain proofs of labor, that function a trust mediator and may be utilized in a spread of the way in practise, like recording charitable donations to avoid corruption.

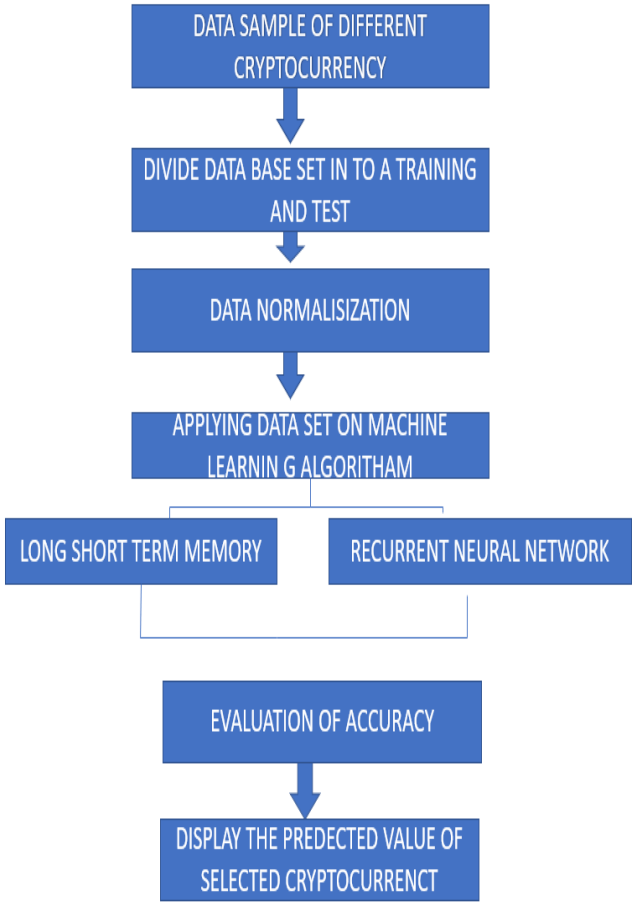
An implementation may be a realization of a technical specification or algorithmic rule as program, computer code parts, or different system although programming and readying. various implementations might exist for specifications or norms. Implementation literally suggests that to place into product or to carry out.

III. COMPARATIVE STUDY

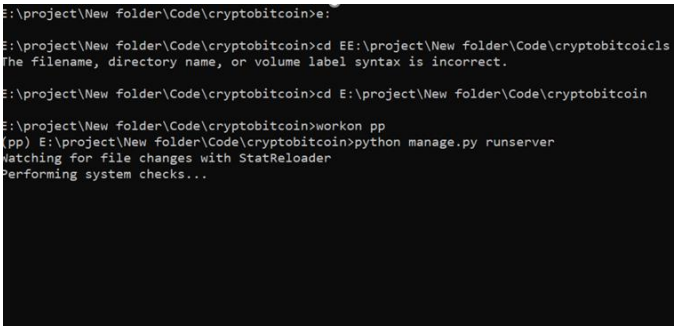
Table 3.1: Comparative study of various algorithms

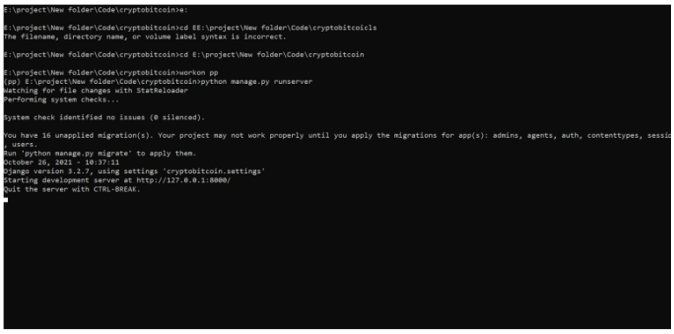
Parameter	Linear Regression	Artificial Neural Network (ANN)	Long Short Term Memory (LSTM)	Recurrent Neural Network (RNN)	Decision Tree
Method used	Pattern Recognition	Pattern Recognition	Pattern Recognition	Pattern Recognition	Splitting data into at least two sets
Accuracy	97.59%	84.80%	92.30%	85.40%	95.88%
Complexity	Simple	Very High	Moderate	Very High	Moderate
Speed	Fastest	Slow	Moderate	Slow	Fast
Advantages and Disadvantages	Advantages- Fast Training Disadvantages- Low capability in recognising longer term dependencies	Advantages- Can approximate any continuous function Disadvantages- Requires heavy computation	Advantages- LSTM coild best forecast next day price prediction Disadvantages- Requires more memory to train	Advantages- RNN is for sequence or time series data Disadvantages- Training of RNN is tough	Advantages- Generates understandable rules Disadvantages- Computationally expensive

FLOW DIAGRAM :



User module : result is the final consequence of a sequence of actions or events expressed qualitatively or quantitatively. There may be a range of possible outcomes associated with an event depending on the point of view, historical distance or relevance. Reaching no result can mean that actions are inefficient, ineffective, meaningless or flawed.





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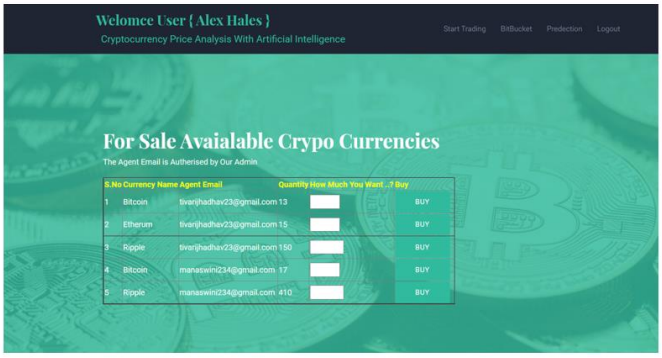
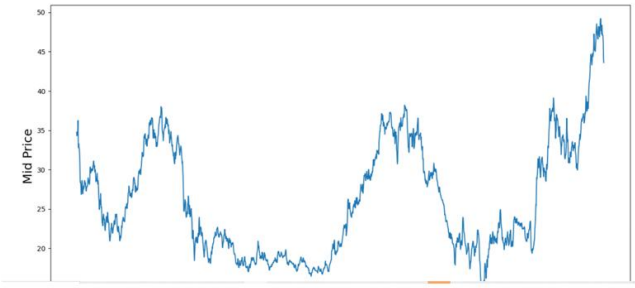
Agent



Cryptocurrency graph



CONCLUSIONS :

In this project, we have a tendency to use 2 distinct AI frameworks, namely, Long Short Term Memory and perennial Neural

Network to research and predict the value dynamics of Bitcoin, Ethereum, Ripple and plenty of a lot of cryptocurrencies. we have a tendency to showed that the LSTM and RNN models area unit comparable and each fairly to a tolerable degree in value prediction, though the interior structures are totally different.

In the returning semester we are going to be developing our 1st paradigm model victimisation Long Short Term Memory (LSTM) and perennial

Neural Network (RNN) algorithmic rule which is able to alter U.S. to get a prediction model for statement the costs of all cryptocurrencies. we'd even be reducing the noise within the datasets for higher potency of model and accuracy. we are going to take into account different aspects to that our system ought to justify and fine tune its practicality and work to allow the user the simplest expertise.

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