

A MINI PROJECT REPORT ON

“BITCOIN ALERT SYSTEM”

Submitted
by

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2019-2020

Bitcoin Alert System

Atharva College of Engineering
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This is to certify that,
Amogh Sawant, Jayesh Rane and Dharmesh Sharma

Of T.E. course in Information Technology Engineering have completed the
specified

Mini Project on,

“Bitcoin Alert System”

As a partial fulfilment of the project work in satisfactory manner as per the rules
of the curriculum laid by the University of Mumbai during the

Academic Year 2019-2020

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MINI PROJECT APPROVAL CERTIFICATE

This is to certify that the mini project report entitled "BITCOIN ALERT SYSTEM", for T.E. (Information Technology) submitted to University of Mumbai by *Amogh Sawant, Jayesh Rane and Dharmesh Sharma* of Atharva College of Engineering, Malad, Mumbai has been approved for Third Year Engineering Degree in Information Technology Engineering.

Examiners

1. -----
2. -----

Guides

1. -----
2. -----

Date:

Place:

Department of Information Technology
Atharva College of Engineering
Malad (W), Mumbai-400095
UNIVERSITY OF MUMBAI

2019-2020

Declaration

We declare that this written submission represents our ideas in our own words and where others' ideas or words have been included, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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Date:

Place:

Abstract

We all know about Bitcoin and how it skyrocketed in 2014 and is still maintain the position in 2019. People who invested in Bitcoin a decade ago are millionaires and billionaires today, but we started to invest in it when it became people around in 2014 and started investing in it. Bitcoin prices fluctuates pretty often with an appreciable margin and when we invest in it we are concerned about it.

In this mini project we've attempted to make a Bitcoin alert system that changes it's color depending on the the price rate relative to the price you bought at. You don't need to constantly keep checking your phone or laptop to get information about Bitcoin prices. Just a glance from from meters or so and you get an idea about it.

It utilizes the database of Bitcoin prices from the official sources and uses Machine Learning to predict the future prices of Bitcoin so that you can make an early move. It also sends an alert message to you via sms or email if the prices are dropping below the price you invested at.

The scope of this product is just limited to it's size. If it's small enough we can use it as a keychain, or if it has a different shape for eg. like a ring, you don't need to check anything but a glance at your hand and you can have an idea about the prices.

Acknowledgements

We have great pleasure in presenting the report on Bitcoin Alert System. We take this opportunity to express our sincere thanks towards our guide Prof. Smita Patil for providing the technical guidelines and the suggestions regarding line of this work. We would like to express our gratitude towards her constant encouragement, support and guidance throughout the development of the project.

We are grateful to Dr. S. P. Kallurkar (Principal), Prof. Deepali Maste (HOD, Information Technology Engineering), without their support and advice our project would not have shaped up as it has.

We wish to express our deep gratitude towards all our colleagues at ACE, Mumbai for their encouragement.

Amogh Sawant

Jayesh Rane

Dharmesh Sharma

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1. INTRODUCTION

1.1 INTRODUCTION

As the bitcoin's demand is increasing rapidly due to which more and more people are investing in bitcoin but many people aren't aware when is the proper time to sell the bitcoin. In such Situation, this system can be used to compare the current price of bitcoin with the selling price the user has set for it

Here we make use of IoT to make the people alert at what time is the time to sell your bitcoin to make huge amount of profits in what they have invested in the currency. It alerts us by fetching the current price of the Bitcoin and comparing with the value we want to compare to and then alerts us by the Led Glows.

1.2 MOTIVATION

Sometimes it happens that bitcoins hike and dip in a week by \$500 and that when seen on the bigger picture helps us to visualize the profit we can earn in a week but as it happens some random week and so no pattern could be found so it would be better to keep a live track and get notified when it crossed a limit.

There is a random fluctuations in bitcoin price that is what we should target to earn as they are the prime time to earn.

1.3 Problem statement

- A python code is written to fetch the price of bitcoin and compare it with selling price and send an alert to user.
- These values are stored in a database which is in the form of a csv file and the data is analysed by using various tools.
- These analysed values allows to alert to us whenever we see hike it alert us on the led and Also get an alert on the mail through a web service we have integrated

1.4 Aim and objective

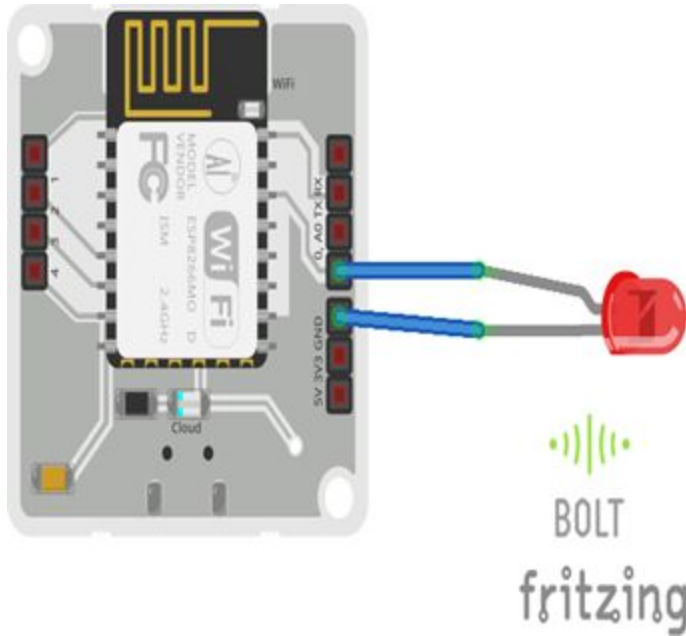
- Fetch the current price of Bitcoin after every 30 seconds in USD.
- Check if the current price returned by the API is greater or less than the selling Price.The selling price can be defined as a variable in the program.
- If the current price of bitcoin is greater or less than the selling price, the program should trigger the Bolt Cloud API to switch on the led accordingly which are connected to the Bolt module for 5 seconds and then switches it off after 5 secs.
- It also notifies you by sending a message via telegram regarding the bitcoin price.
- The Date ,time , the selling price of bitcoin and the current price of bitcoin all these things can be stored in the database.
- Using the data from the database the bitcoin's price can be analysed.

Literature Survey

Title	Author	Approach
Internet of Things with ESP8266	Marco Schwartz	Configure ESP8266 to the cloud and explore the networkable modules that will be utilized in the IoT projects
Building the Internet of Things: Implement New Business Models, Disrupt Competitors, Transform Your Industry	Maciej Kranz	Connect your organization to the Internet of Things with solid strategy and a proven implementation plan Building Internet of Things
Learning Internet of Things	Peter Waher	This book starts by exploring the popular HTTP, UPnP, CoAP, MQTT, and XMPP protocols.

Project Design and implementation

Projects Circuit Designs



Project Design Implementation:

- Here as we can understand the leds are connected in the output GPIO ports of the Bolt WiFi – Module and the ground pin to let the led glow.
- When connected to WiFi and then to the internet the module fetches the Bitcoin price from the internet and compares and analyses the price and Blinks the led Accordingly
- Hence This design reduces the workload of carrying a WiFi module and all the wires required to connect a WiFi module to a IoT platform because bolt supports WiFi feature inbuilt in it.

Hardware & Software Requirements

Hardware:

- Wifi Module – Esp8266
- Led – 2
- Resistors 330 ohm - 2
- Male to Female Connecting Wire – 6
- Breadboard
- USB-A to Mini-USB Cable

Software:

- Python IDE
- Telegram Messenger
- Csv file (database)
- Pandas , Numpy, Seaborn , Matplotlib tools

Results

Screenshots:

1. Initial Execution :

```
The Current Price is 7940.73  
The Selling Price is 100000  
Current Price is less than the Selling Price  
{ "value": "1", "success": 1 }  
LED is ON  
{ "value": "1", "success": 1 }  
LED is OFF
```

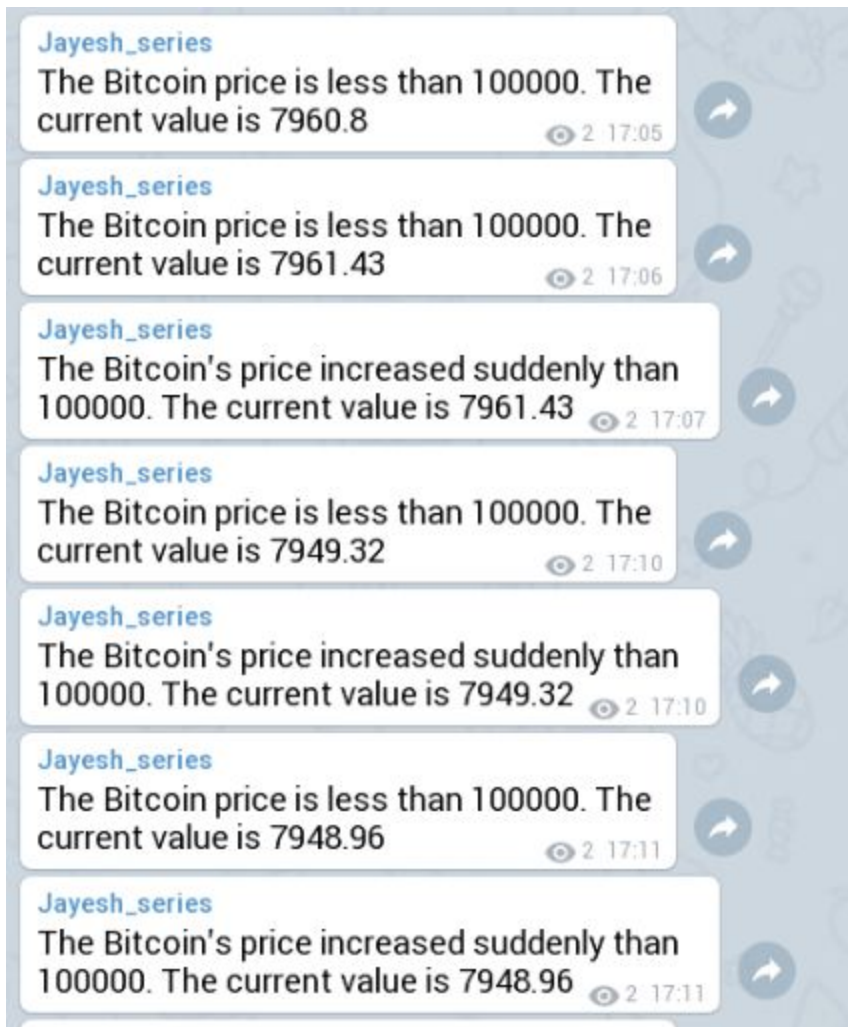
In this step, the system gives the current price of bitcoin and its selling price which is set by the user and then according to the condition it triggers the led and switches it off after 5 seconds.

2. Z- Score Analysis:

```
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 10 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 9 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 8 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 7 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 6 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 5 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 4 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 3 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 2 more data points
This is the value 7940.73
This is the value 7940.73
Not enough data to compute Z-score. Need 1 more data points
This is the value 7940.73
```

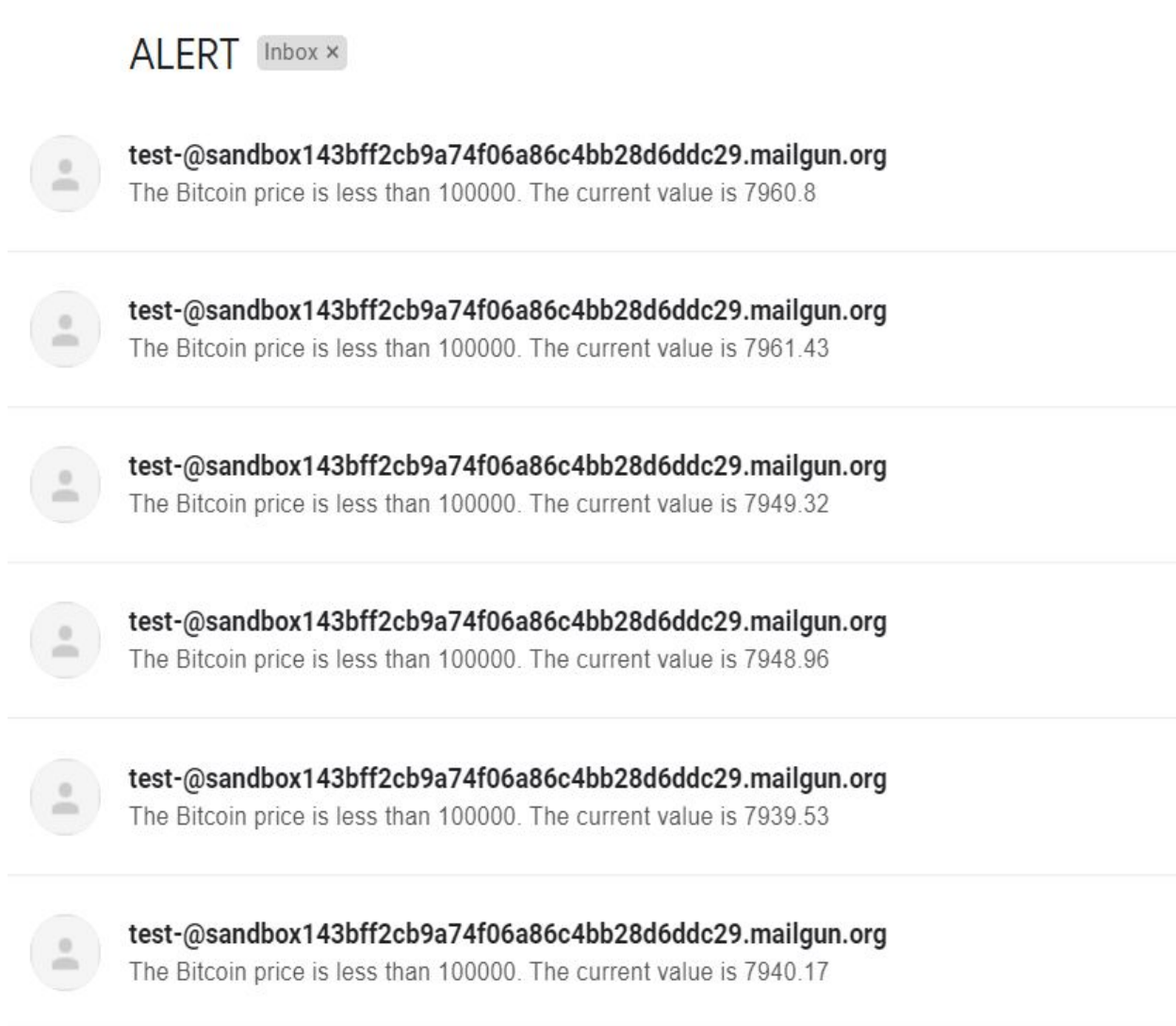
In this step, the system performs Z-Score Analysis on the current price of bitcoin to check whether the price of bitcoin changes suddenly or not.

3. Telegram alert :



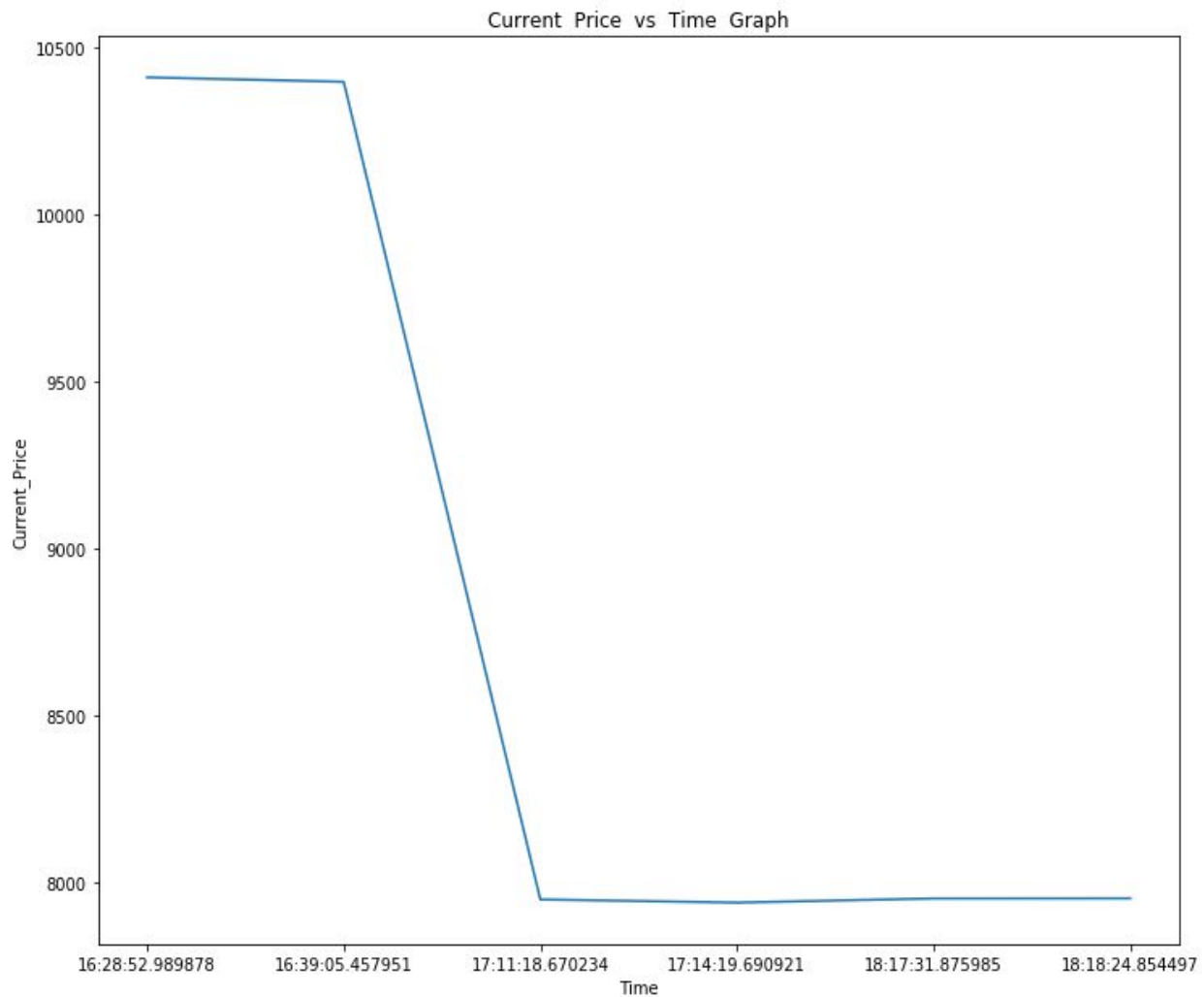
Here the system sends all the alerts to the user via telegram

4. Email Alert:



Here the System sends all the alerts to the user through Email

5. Data Analysis:



Here the data from the database file is analysed to plot a graph of Current Price vs Time which gives information about the current bitcoin price at that specific time.

Conclusion

The main objective of the project was to create a Bitcoin Price Alert System and that we have successfully implemented and the user can compare the current price and selling of bitcoin at any time.

The user can get alerts via telegram and mail for various different information regarding bitcoin.

The data such as date, time , current price ,selling price and the difference between the current price and selling price is stored in a csv file.

This data from the csv file is used for performing data analysis such as plotting the graph of current price vs time.

Thus We have Successfully implemented Bitcoin Price Alert System using IOT.

References

1. Journals :

1. Attack and anomaly detection in IoT sensors in IoT sites using machine learning approaches
2. A security monitoring system for internet of things
3. Blockchain for the IoT and industrial IoT: A review

2. Name of the books :

1. Internet of Things with ESP8266 By Marco Schwartz
2. Building the Internet of Things: Implement New Business Models, Disrupt Competitors, Transform Your Industry By Maciej Kranz
3. Learning Internet of Things By Peter Waher

3. Websites :

Bolt Iot forum - <https://forum.bolttot.com>

Hackster.io - <https://www.hackster.io>

Article - <https://www.hackster.io/jayeshrane999/bitcoin-price-alert-system-882bec>

Article - <https://www.hackster.io/rahulkumarsingh/crypto-alert-system-using-bolt-iot-d62df1>