



Parshvanath Charitable Trust's  
**A. P. SHAH INSTITUTE OF TECHNOLOGY, THANE**  
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**Department of Information Technology**



# **Monitoring Health of IOT Network Using Blockchain**

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# Contents

01 | Introduction

02 | Objectives

03 | Problem Definition

04 | Technological Stack

05 | Review Suggestions

06 | Proposed System Working

07 | Prototype Design Demonstration

08 | Plan of Paper Publication

# Introduction

- ◆ Millions of Internet of Things (IoT) devices are connected to different systems and networks, providing different services and performing different functions.
- ◆ Examples of IoT applications include automated monitoring, control, management, and maintenance.
- ◆ Limitations include the inability to monitor running software status in an IoT deployment in real-time that are vulnerable to attacks.

# Objectives

The monitoring module can detect status change of target software and send message to the administrator terminal.



## Monitoring

To ensure the security of blockchain network, so as to prevent the system from being destroyed by attackers.



## Security

To give access to multitude of nodes to join or leave the network, and their behavior will not have a bad impact on the network.



## Scalability

To make sure that other nodes communicating with the node are honest, they will respond to the node's request and send trusted block data it needs.



## Soundness

To ensure the accuracy of the monitoring module, false negatives and false positives can have bad impact on the system.



## Accuracy

# Problem Definition

- ◆ Hackers have already deployed malware to exploit inter connected sensors and gained access to private networks.
- ◆ Critical threats to their infrastructure because of unauthorised intrusions intending to disrupt, degrade, or destroy systems.
- ◆ We intend to secure that by creating a reliable product that makes use of Blockchain technology.

## Reference:

IoT Technological Development: Prospect and Implication for Cyber stability



# Technological Stack

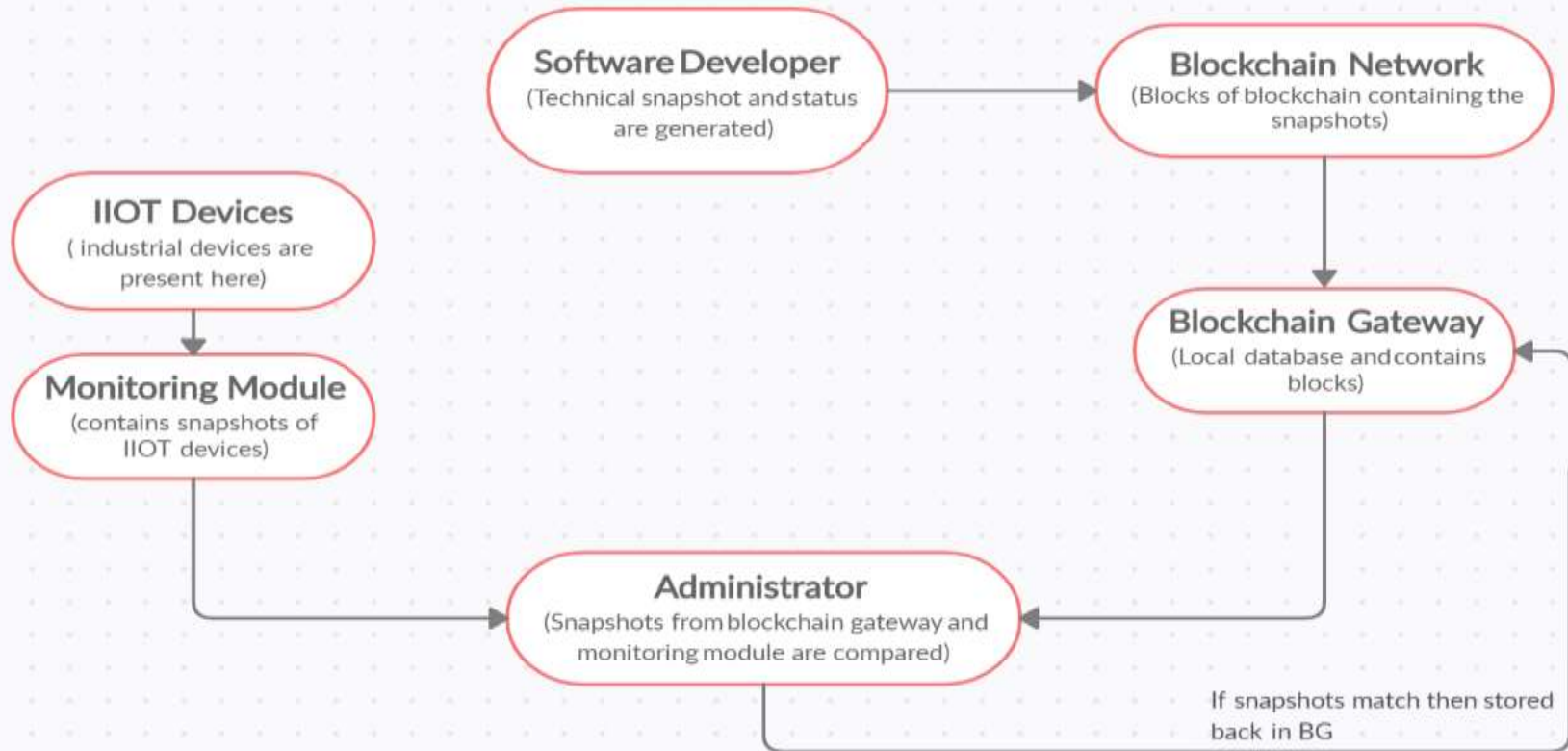
## Software

- ◆ Arduino IDE
- ◆ Thingspeak

## Hardware

- ◆ Nodemcu
- ◆ DHT11 Sensor
- ◆ USB Cable

# Proposed System Working





# Prototype Design Demonstration

Block Hash: 7bc36d9d38131ae0bfedaede45592dc944c  
BlockNo: 1  
Block Data: Block 1  
Hashes: 215551  
-----

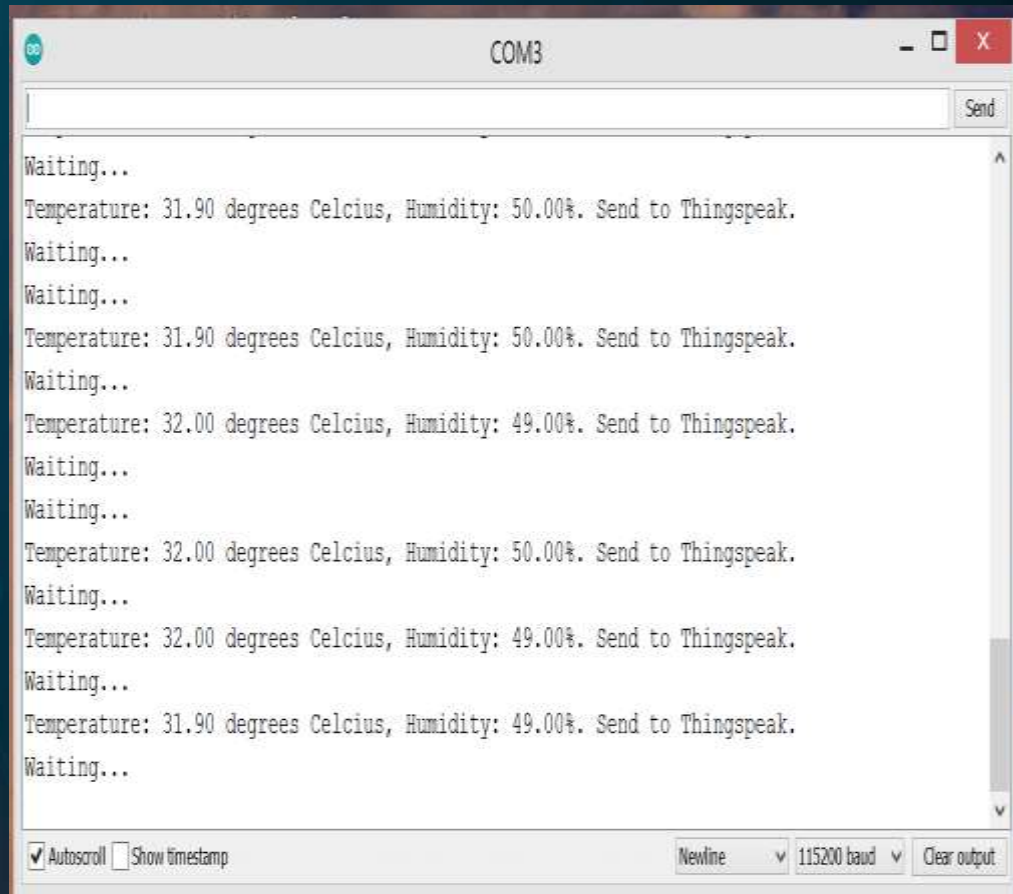
Block Hash: 82243ebabd98cca1f5523114150821de15f  
BlockNo: 2  
Block Data: Block 2  
Hashes: 1217029  
-----

Block Hash: 2c6249c877671d13b7959f869ce5ad61061  
BlockNo: 3  
Block Data: Block 3  
Hashes: 692771  
-----

Block Hash: bd9cf7998b2fc3a58f58111ed9a07be85e7  
BlockNo: 4  
Block Data: Block 4  
Hashes: 406042  
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Block Hash: 5f7f98b9e3d1eb3ab594b1f576483e36472  
BlockNo: 5  
Block Data: Block 5  
Hashes: 199498  
-----

Block Hash: d0e54e3b9e851ca9c209dd492b13603cadb  
BlockNo: 6  
Block Data: Block 6  
Hashes: 368351  
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# Plan of Paper Publication

**Conference: 2021 IEEE  
41st International  
Conference on  
Distributed Computing  
Systems (ICDCS)**

Abstract Submission  
Deadline

**06 January, 2021**

**13 January, 2021**

Accepted Paper  
Submission Deadlines

Notification of  
Acceptance Date

**17 March, 2021**

**07-10 July, 2021**

Conference Dates

**Thank  
You**