# Securing IOT deviceses using Blockchsin

A modern beamer theme

Rafsal Rahim

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Dept. MCA, College of Engineering Trivandrum

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# Introduction

# What do IOT mean?

**Definition**

The internet of things is a system of interrelated computing devices that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

IoT architecture can be represented by four building blocks:

- Things
- Gateways
- Network infrastructure
- Cloud infrastructure

# Figures 1

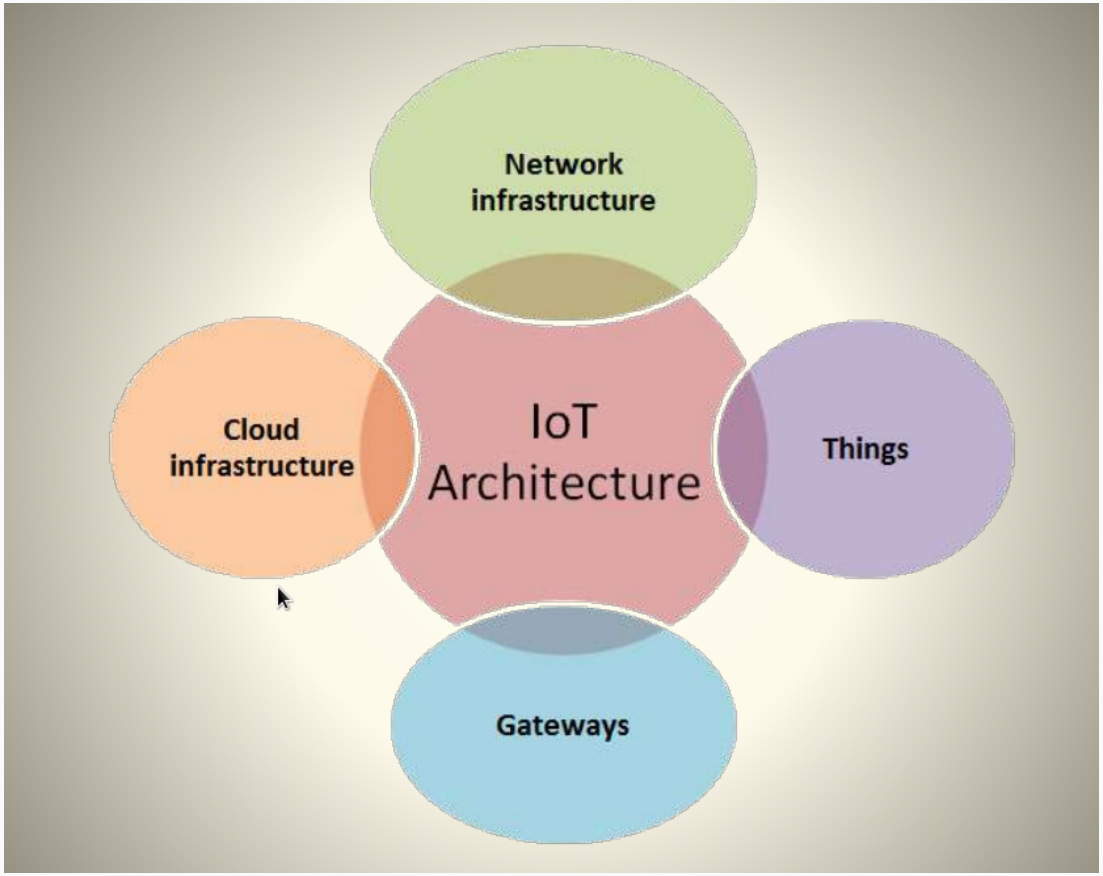



**Figure 1:** building blocks of IoT

# Challenges

# Challenges to secure IoT deployments

- IoT Systems are poorly designed
- complex and sometimes conflicting configurations
- Limited guidance for life cycle maintenance and management of IoT devices
- There is a lack of standards for authentication and authorization of IoT edge devices.
- denial-of-sleep attacks
- denial-of-service attacks (DoS) attacks

# Problem with current centralized model

- Current IoT ecosystems rely on centralized, brokered communication models.
- Existing IoT solutions are expensive.
- Lack of security has made users loose trust on the data sharing system.
- No relaible way to ensure security of collected data.
- Cloud servers will remain a bottleneck and point of failure that can disrupt the entire network.

# Solution using decentralization

# Decentralizing IoT networks

A decentralized approach to IoT networking would solve many of the issues above.

- prevent failure in any single node in a network from bringing the entire network to a halting collapse.
- reduce the costs associated with installing and maintaining large centralized data centers.
- IoT security is much more than just about protecting sensitive data.
- Any decentralized approach must support three foundational functions:
  1. Peer-to-peer messaging;
  2. Distributed file sharing;
  3. Autonomous device coordination.

# The Blockchain Approach

*Blockchain distributed ledger technology.*

The data recorded are transparent, secure, auditable, and efficient.

**What do blockchain means?**

- distributed ledger
- maintaining a permanent and tamper-proof record of transactional data.
- Each of the computers in the distributed network maintains a copy of the ledger

# Some advantages of blockchain?

- The big advantage of blockchain is that it's public.
- A blockchain is decentralized, so there is no single authority
- Most importantly, it's secure. The database can only be extended and previous records cannot be changed

# Elements

# Typography

```
The theme provides sensible defaults to
\emph{emphasize} text, \alert{accent} parts
or show \textbf{bold} results.
```

becomes

The theme provides sensible defaults to *emphasize* text, accent parts or show **bold** results.

# Font feature test

- Regular
- *Italic*
- Small Caps
- **Bold**
- ***Bold Italic***
- **Bold Small Caps**
- `Monospace`
- *`Monospace Italic`*
- `Monospace Bold`
- *`Monospace Bold Italic`*

# Lists

Items

- Milk
- Eggs
- Potatoes

Enumerations

1. First,
2. Second and
3. Last.

Descriptions

**PowerPoint** Meeh.

**Beamer** Yeeeha.

# Animation

- This is important

# Animation

- This is important
- Now this

# Animation

- This is important
- Now this
- And now this

# Animation

- This is really important
- Now this
- And now this

# Tables

**Table 1:** Largest cities in the world (source: Wikipedia)

| City | Population |
|---|---|
| Mexico City | 20,116,842 |
| Shanghai | 19,210,000 |
| Peking | 15,796,450 |
| Istanbul | 14,160,467 |

# Blocks

Three different block environments are pre-defined and may be styled with an optional background color.

**Default**

Block content.

**Alert**

Block content.

**Example**

Block content.

**Default**

Block content.

**Alert**

Block content.

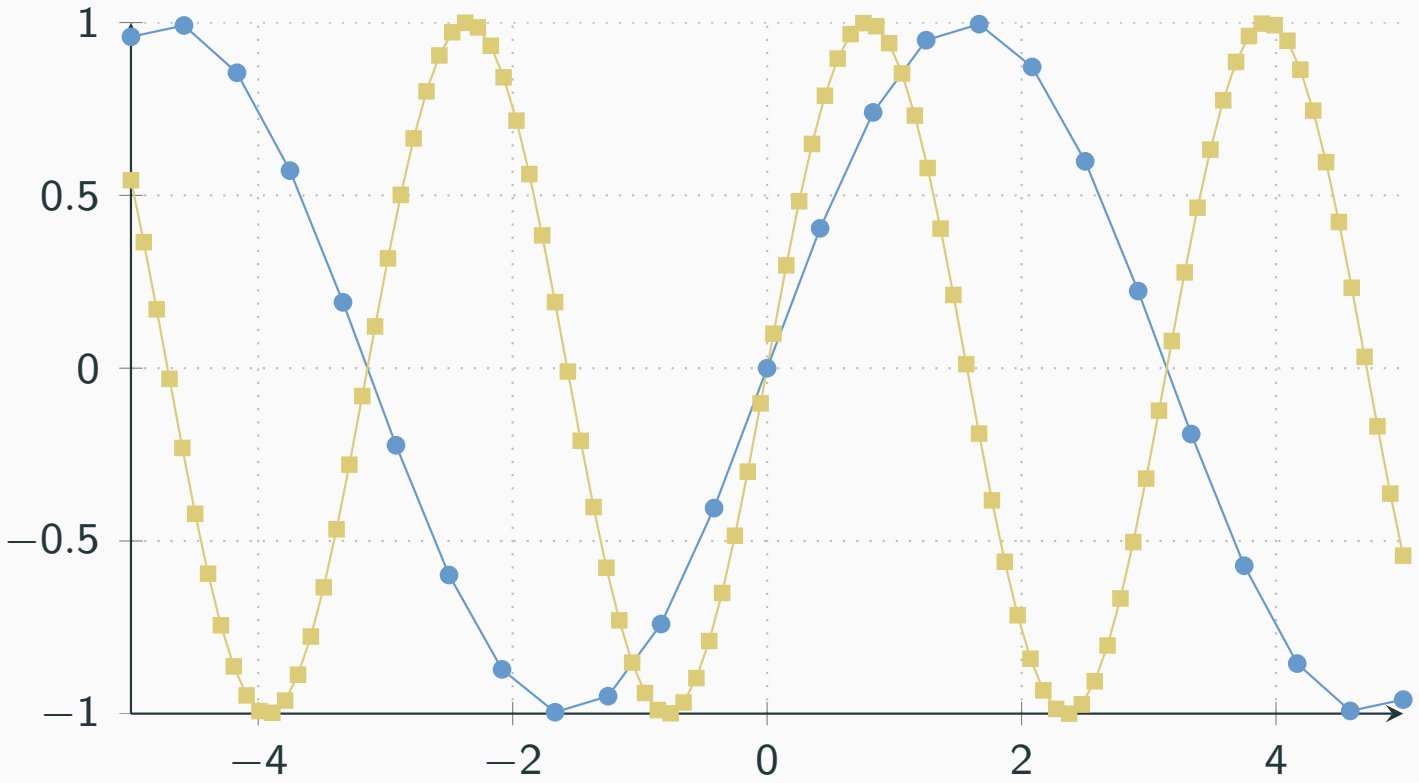
**Example**

Block content.

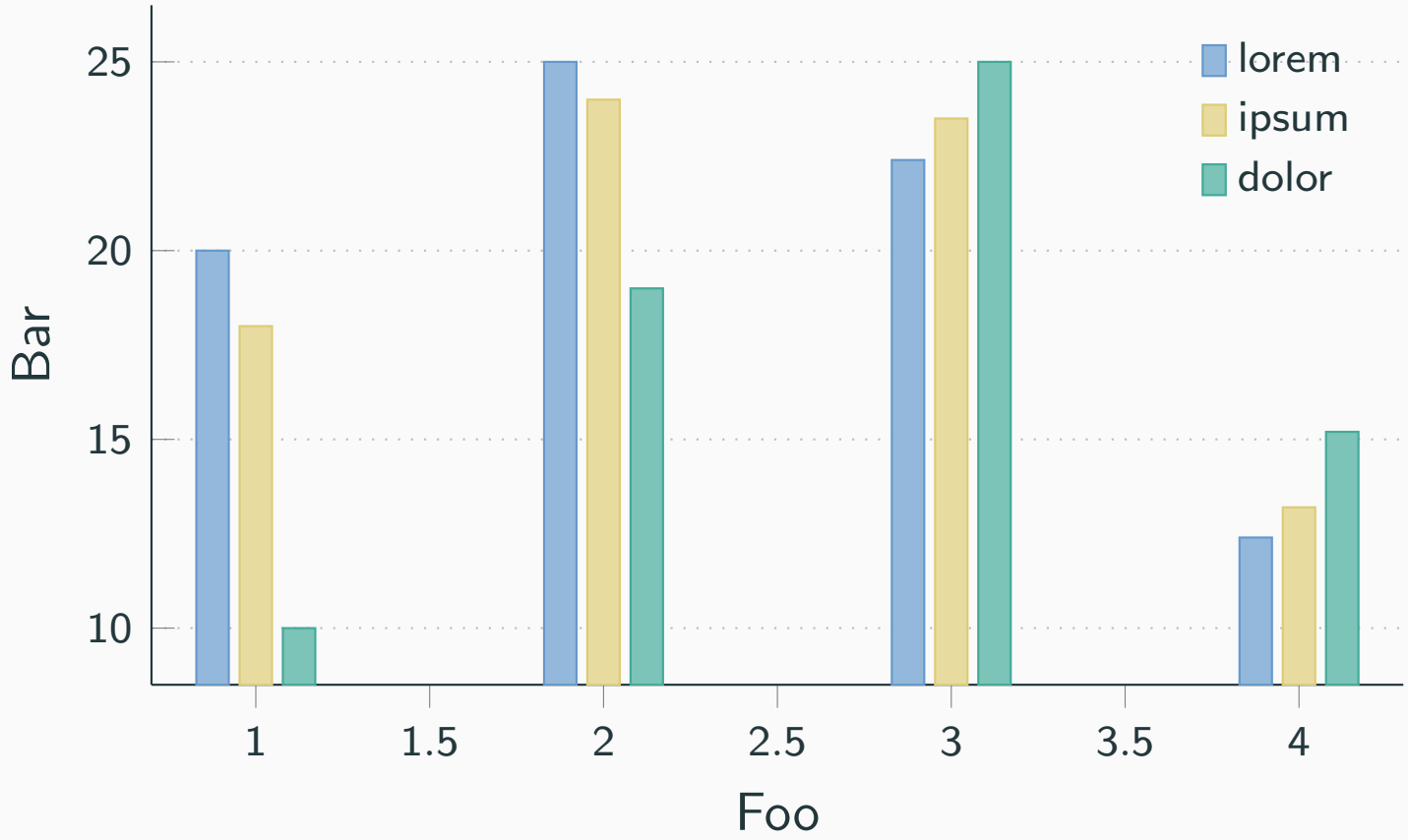
# Math

$$e = \lim_{n \to \infty} \left(1 + \frac{1}{n}\right)^n$$

# Line plots



# Bar charts



# Quotes

*Veni, Vidi, Vici*

# Frame footer

**IoT** defines a custom beamer template to add a text to the footer. It can be set via

```
\setbeamertemplate{frame footer}{My custom footer}
```

# References

Some references to showcase [allowframebreaks] [**?**, **?**, **?**, **?**, **?**]

# Conclusion

# Summary

Get the source of this theme and the demo presentation from

`github.com/matze/mtheme`



# Questions?

# Backup slides

Sometimes, it is useful to add slides at the end of your presentation to refer to during audience questions.

The best way to do this is to include the `appendixnumberbeamer` package in your preamble and call `\appendix` before your backup slides.

**IoT** will automatically turn off slide numbering and progress bars for slides in the appendix.

# References I