Pundra University of Science & Technology

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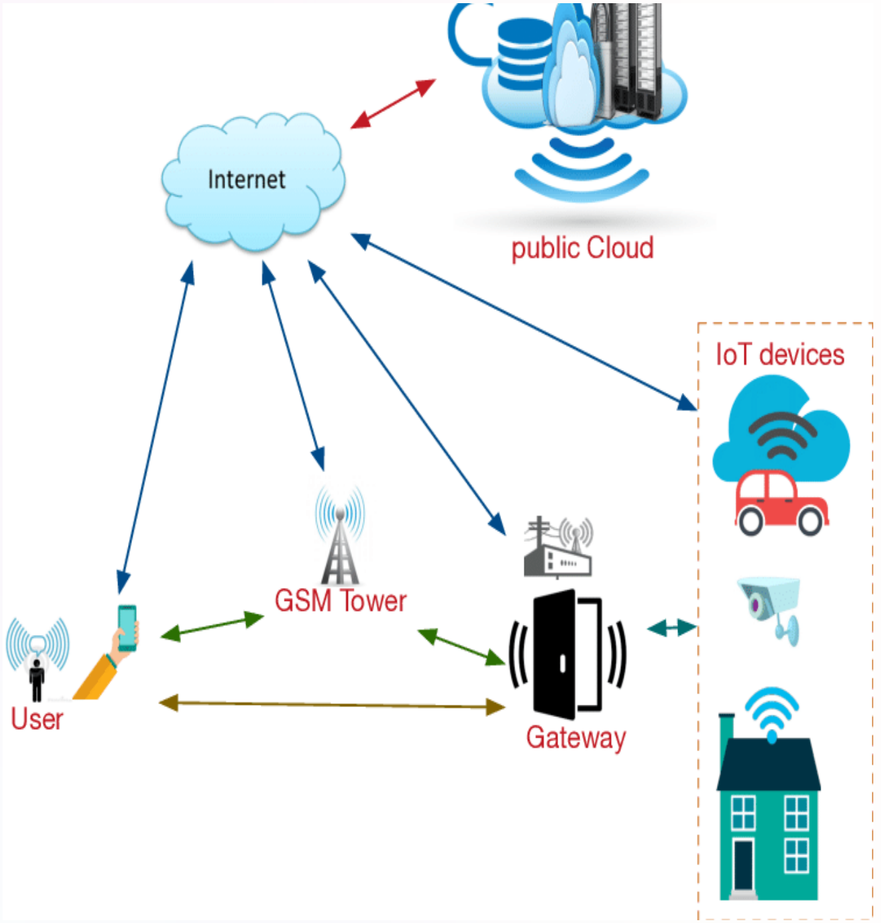
Topic: Internet of Things (IoT): Connecting the World Intelligently

Introduction

The Internet of Things is a network of interconnected smart devices. These devices communicate and share data automatically. Sensors, software, and connectivity enable real-time interactions. IoT bridges the physical and digital worlds.



Interconnected Devices

A network of physical objects connected via the internet.

Data Exchange

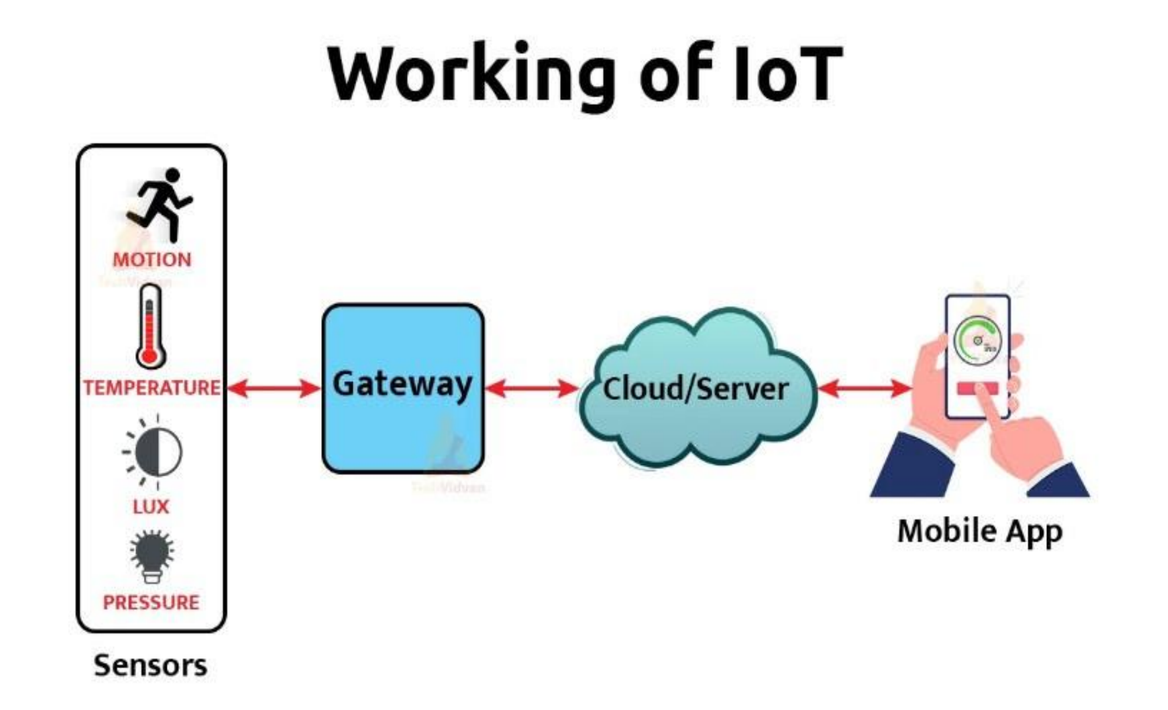
Devices communicate and share data without intervention.

Digital Bridge

Connects the physical and digital worlds.

Working Procedure of IoT

1. **Devices/Sensors:** Collect data from the environment.
2. **Connectivity:** Data is transferred using Wi-Fi, Bluetooth, 4G, etc.
3. **Data Processing:** Cloud or local servers analyze the data.
4. **Action:** A response is generated, like sending an alert or turning on a device.



Key Components of IoT

IoT architecture include sensors, connectivity, and cloud infrastructure.
These components work together to create a functional IoT ecosystem.

Sensors and Actuators

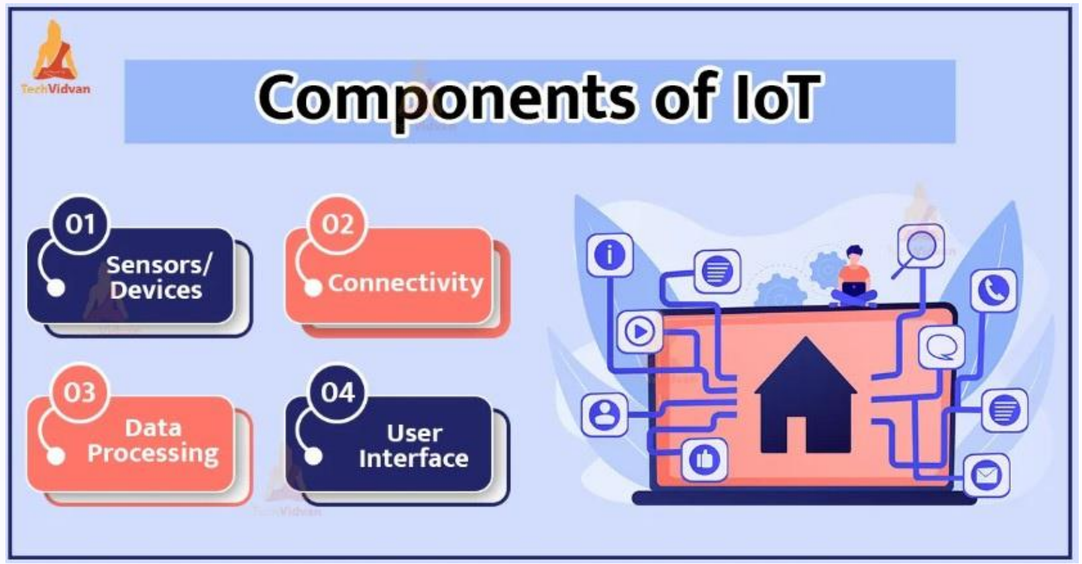
Collect and respond to data.

Connectivity

Uses 4G, WiFi, and Bluetooth.

Cloud Computing

Provides infrastructure.

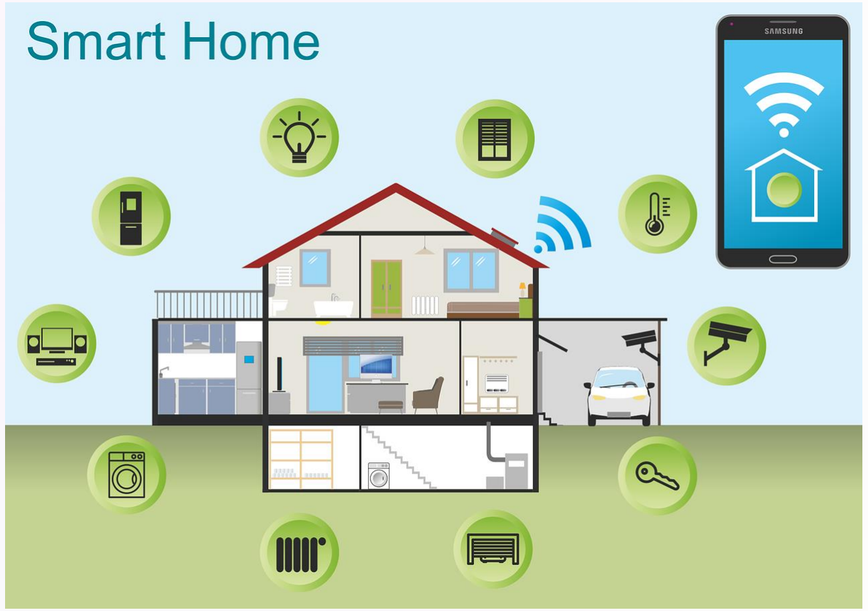


Applications of IoT

Healthcare IoT

Healthcare IoT enables remote patient monitoring, wearable health trackers, smart medical equipment, personalized treatment, and potential 25% cost reduction in healthcare.

Smart Home IoT

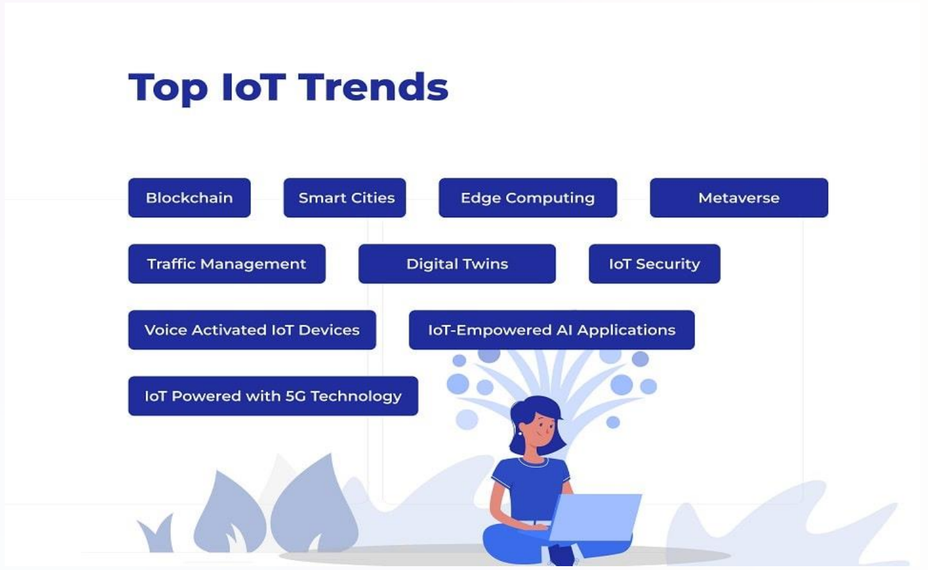


Smart Home IoT connects devices such as lights, thermostats, and security systems, enabling remote control, automation, and real-time monitoring to enhance comfort, energy efficiency, and home security.

Future Trends in IoT

Edge computing, AI, and machine learning are enhancing IoT capabilities, while 5G networks expand possibilities for sustainable and green technologies.

1. Edge Computing
2. AI Enhancement
3. 5G Networks



Conclusion

The Internet of Things (IoT) is revolutionizing the way we interact with technology by creating smarter homes, industries, cities, and healthcare systems. It enables real-time monitoring, automation, and decision-making across various sectors.