



SOUTH EAST ASIAN EDUCATION TRUST®
S.E.A. COLLEGE OF ENGINEERING & TECHNOLOGY
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Affiliated to Visvesvaraya Technological University (VTU), Belagavi, Recognised by Government of Karnataka)

Department of Electronics and Communication Engineering

Seminar Report on IOT Basics And Its Applications

A Seminar on “IOT Basics and Its Applications” was organized by Department of Electronics and Communication Engineering, S.E.A College of Engineering and Technology, Bangalore on 04th September, 2024. The Seminar was conducted in EC Seminar Hall, S.E.A College of Engineering and Technology from 10.30 am to 12.30 pm. The seminar was arranged for second year students. Nearly 60 students participated in the seminar. The function was presided by Dr. Krishna Kumar, HOD CSE, SEACET.

About Seminar:

S.E.A COLLEGE OF ENGINEERING & TECHNOLOGY
AFFILIATED TO VISVESVARAYA TECHNOLOGICAL UNIVERSITY & APPROVED BY ALL INDIA COUNCIL OF TECHNICAL EDUCATION (AICTE)
Ekta Nagar, A. Krishnappa Circle, Ayyappanagar
Devasandra Main Road, Virgo Nagar Post, K.R. Puram, Bangalore - 560 049.

Department of Electronics and Communication Engineering
Organizes
Seminar on
“IOT BASICS AND ITS APPLICATIONS”
In Association with IQAC, IIC and IEEE

On 04th September 2024
at 10.30AM

Dr Ravikumar M
Associate Professor
CITech

Sri A. Krishnappa
Founder Chairman
S.E.A Group of Institutions

INSTITUTION'S INNOVATION COUNCIL
S.E.A Group of Institutions

INTERNET OF THINGS

Objective of the Seminar:

The objective of this seminar is to provide participants with a comprehensive understanding of:

1. IOT Systems
2. Basic concepts of IOT
3. Applications of IOT
4. Challenges and considerations
5. Future trends and developments

Resource Person of the Seminar:

Resource Person of the seminar was Dr. Ravikumar M, Associate Professor, CITECH, Bangalore.

Insights from Seminar:

Dr. Ravikumar M, Associate Professor, CITECH, Bangalore, delivered the topic on “IoT Basics and Its Applications” The seminar provided invaluable insights for participants,

1. Introduction

- **Definition of IoT:** The Internet of Things (IoT) refers to a network of interconnected devices that communicate and exchange data with each other through the internet.
- **Importance of IoT:** Discuss how IoT is revolutionizing various sectors by enhancing efficiency, automation, and data-driven decision-making.

2. Basic Concepts of IoT

- **Components of IoT:**
 - **Devices/Sensors:** Collect data from the environment (e.g., temperature sensors, motion detectors).
 - **Connectivity:** Technologies such as Wi-Fi, Bluetooth, and cellular networks that allow devices to communicate.
 - **Data Processing:** Cloud computing and edge computing where data is analyzed and processed.
 - **User Interface:** How users interact with the IoT system (e.g., through apps or dashboards).
- **Communication Protocols:** Overview of protocols like MQTT (Message Queuing Telemetry Transport), CoAP (Constrained Application Protocol), and HTTP.

3. Architecture of IoT Systems

- **Device Layer:** The physical layer consisting of sensors and actuators.
- **Network Layer:** The connectivity infrastructure (e.g., routers, gateways).
- **Data Processing Layer:** Includes cloud computing services and edge computing resources.

- **Application Layer:** The software applications that utilize the processed data to provide meaningful insights.

4. Applications of IoT

- **Smart Homes:**
 - **Home Automation:** Smart lighting, smart thermostats, security systems.
 - **Energy Management:** Monitoring and controlling energy consumption.
- **Healthcare:**
 - **Wearable Devices:** Fitness trackers, remote patient monitoring.
 - **Smart Medical Devices:** IoT-enabled medical equipment for real-time data collection.
- **Industrial IoT (IIoT):**
 - **Predictive Maintenance:** Monitoring machinery to predict and prevent failures.
 - **Supply Chain Management:** Tracking goods and optimizing logistics.
- **Agriculture:**
 - **Precision Farming:** Using sensors for soil moisture, crop health monitoring, and automated irrigation.
 - **Livestock Management:** Tracking animal health and location.
- **Smart Cities:**
 - **Traffic Management:** Smart traffic lights, congestion monitoring.
 - **Public Safety:** Surveillance systems, emergency response.
- **Environmental Monitoring:**
 - **Climate and Weather Monitoring:** Sensors for air quality, weather conditions.
 - **Disaster Management:** Early warning systems for natural disasters.

5. Challenges and Considerations

- **Security:** Addressing vulnerabilities and protecting data integrity.
- **Privacy:** Ensuring user data privacy and compliance with regulations.

- **Interoperability:** Standardizing protocols and ensuring devices from different manufacturers can work together.
- **Scalability:** Managing the increasing number of devices and data traffic.

6. Future Trends and Developments

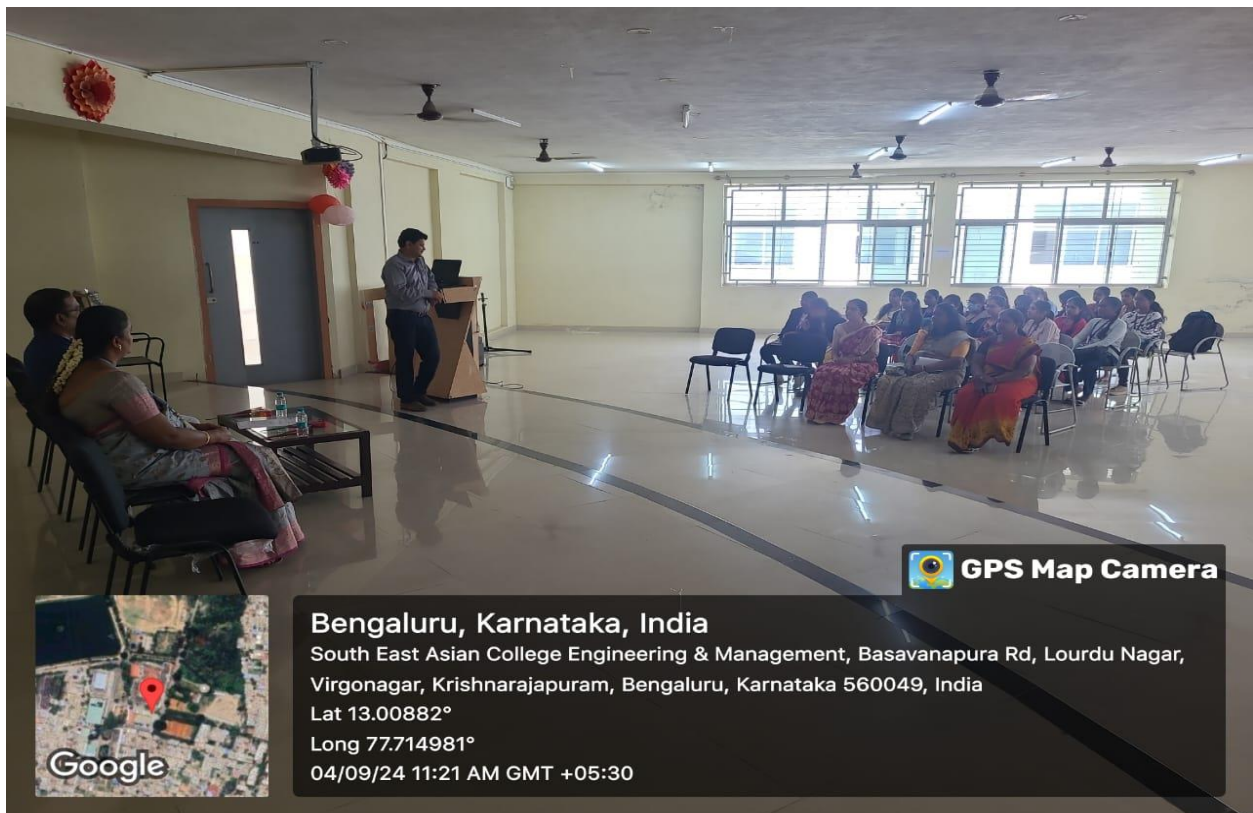
- **Advancements in Technology:** Emerging technologies like 5G, AI integration, and enhanced sensors.
- **Increased Adoption:** Predictions for growth in various sectors and regions.
- **Ethical and Social Implications:** Considerations regarding the impact of IoT on society and ethics.

7. Conclusion

- **Summary of Key Points:** Recap the basic concepts, applications, challenges, and future trends.
- **Impact of IoT:** Emphasize the transformative potential of IoT across different domains.

Seminar Outcome:

- Enhanced Understanding
- Expanded Network
- Practical Skills Development
- Career Guidance



IoT Basics and Its Applications
Seminar on 04.09.2024

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55		VIKAS GOWDA R	<i>Vikal Gowda R</i>
56		BAISHAKI JASH	<i>Baishakhi Jash</i>
57		AMITH A S	<i>Amith</i>
58		ASHIK	<i>Ashik</i>
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