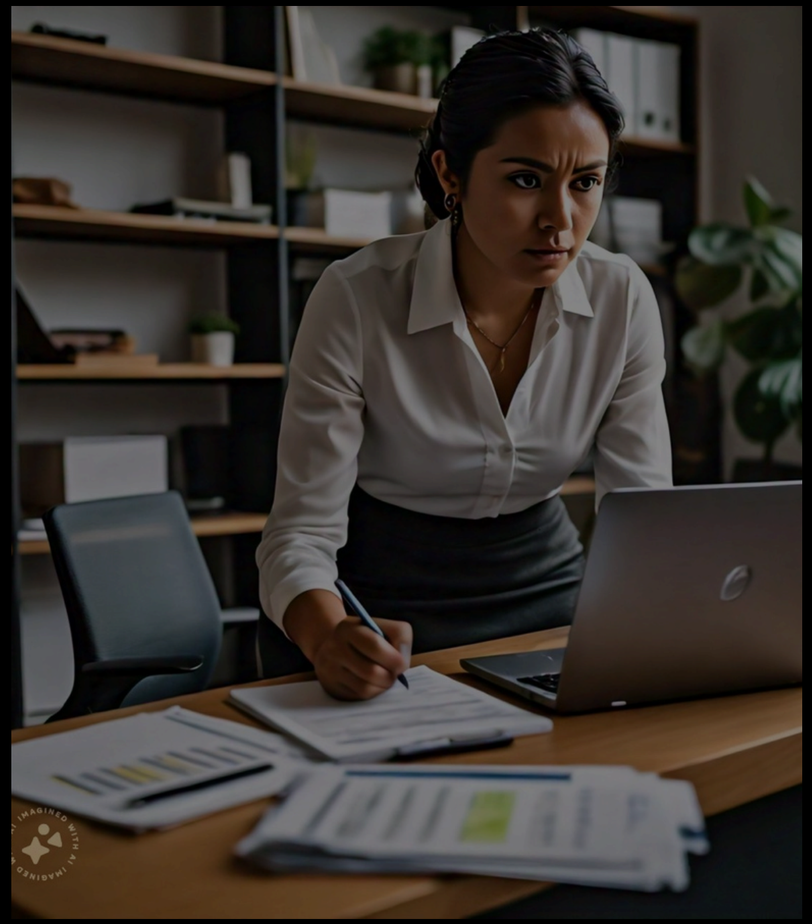
TS
TECH TEACH
EDUCATIONAL SOLUTIO

IOT (Internet of Things)

OUR MISSION :



"Our mission is to empower learners worldwide through innovative technology, personalized learning experiences, and accessible educational resources. We strive to cultivate a community where every individual can achieve their full potential, regardless of their background or circumstances."

OUR VALUES :

"To pioneer the future of education by leveraging cutting-edge technology to make learning more engaging, effective, and inclusive. We envision a world where education transcends boundaries, creating opportunities for lifelong learning and fostering a society enriched by knowledge and creativity."

COURSE CURRICULUM:

Week 1: IoT Fundamentals Review

- Day 1-2: Introduction to IoT
  - Overview of IoT architecture and components.
  - Key use cases and industry applications.
- Day 3-4: IoT Communication Protocols
  - Understanding MQTT, CoAP, HTTP, and WebSockets.
  - Hands-on: Setting up communication using MQTT.
- Day 5: IoT Hardware Platforms
  - Overview of popular IoT hardware (Raspberry Pi, Arduino, ESP32).
  - Hands-on: Basic setup and programming of an IoT device.

COURSE CURRICULUM:

Week 2: Advanced IoT Hardware and Sensors

- Day 1-2: Sensor Integration
  - Connecting and integrating various sensors (temperature, humidity, motion, etc.).
  - Hands-on: Reading sensor data using IoT hardware.
- Day 3-4: Actuators and Control
  - Working with actuators (relays, motors, LEDs).
  - Hands-on: Controlling actuators through IoT devices.
- Day 5: Power Management and Optimization
  - Strategies for power optimization in IoT devices.
  - Hands-on: Implementing power-saving techniques.

COURSE CURRICULUM:

Week 3: IoT Edge Computing

- Day 1-2: Introduction to Edge Computing
  - Understanding the concepts of edge computing in IoT.
  - Benefits and challenges of edge computing.
- Day 3-4: Edge Devices and Gateways
  - Configuring edge devices and gateways.
  - Hands-on: Setting up a Raspberry Pi as an edge device.
- Day 5: Edge Analytics
  - Performing data analytics on edge devices.
  - Hands-on: Implementing basic analytics on edge devices.

COURSE CURRICULUM:

Week 4: IoT Data Management and Cloud Integration

- Day 1-2: IoT Data Storage and Databases
  - Choosing the right database for IoT applications.
  - Hands-on: Setting up a time-series database (e.g., InfluxDB).
- Day 3-4: Cloud Platforms for IoT
  - Overview of IoT cloud platforms (AWS IoT, Azure IoT, Google Cloud IoT).
  - Hands-on: Connecting IoT devices to a cloud platform.
- Day 5: Data Ingestion and Processing
  - Techniques for data ingestion and real-time processing.
  - Hands-on: Implementing a data pipeline using cloud services.

COURSE CURRICULUM:

Week 5: IoT Security

- Day 1-2: Security Fundamentals for IoT
  - Understanding the security challenges in IoT.
  - Best practices for securing IoT devices and data.
- Day 3-4: Implementing IoT Security
  - Hands-on: Implementing secure communication (TLS/SSL) for IoT devices.
  - Using authentication and authorization mechanisms.
- Day 5: Security Monitoring and Incident Response
  - Setting up security monitoring for IoT networks.
  - Incident response strategies for IoT security breaches.

COURSE CURRICULUM:

Week 6: IoT Analytics and Visualization

- Day 1-2: IoT Data Analytics
  - Techniques for analyzing IoT data.
  - Hands-on: Implementing basic machine learning models on IoT data.
- Day 3-4: Data Visualization
  - Tools and techniques for visualizing IoT data.
  - Hands-on: Creating dashboards using Grafana or similar tools.
- Day 5: Advanced Analytics Use Cases
  - Implementing predictive maintenance and anomaly detection.
  - Hands-on: Developing advanced analytics solutions.

COURSE CURRICULUM:

Week 7: IoT Application Development

- Day 1-2: Building IoT Applications
  - Frameworks and tools for IoT application development.
  - Hands-on: Developing a basic IoT application.
- Day 3-4: Mobile and Web Integration
  - Integrating IoT applications with mobile and web platforms.
  - Hands-on: Building a mobile/web interface for an IoT application.
- Day 5: Deploying IoT Applications
  - Best practices for deploying and maintaining IoT applications.
  - Hands-on: Deploying an IoT application to the cloud.

COURSE CURRICULUM:

Week 8: Final Project and Presentations

- Day 1-4: Project Development
  - Students work on a comprehensive final project that integrates multiple aspects of the curriculum.
- Day 5: Project Presentation and Evaluation
  - Students present their projects.
  - Feedback and evaluation.

Our Partners Company's

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THANK YOU

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