Global Reach: www.positivequadrant.in
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IoT Training

(40 Hours)

A training pack for Faculties

Dear Sir/Madam

Sub: To organize IoT Training in your college.

This is to bring to your kind notice that **POSITIVE QUADRANT TECHNOLOGIES LLP** is an Indian entity exploring itself in various sectors like Software Development , Augmented Reality , Virtual Reality , IoT , Simulation ,Games Development ,Mobile Applications,3D Modelling Development , Practical Educational Training, Professional Training, Corporate Training, Web & IT Services.

IoT Training conceptualized by **some top industry professionals** in association with **POSITIVE QUADRANT TECHNOLOGIES LLP**. It is going to be India's first & biggest workshop series based on this market flag bearer of cloud systems.

This workshop will also provide a platform where young engineers can mould their imagination into reality and feel the excitement first-hand. With this end in view, we extend our support and technical expertise to the young engineers of your College in the form of this workshop. We seek your cooperation and look forward towards a successful execution of this workshop in your college.

We are hoping that you will find this training really interesting for the students. If you have any queries, please get back to us anytime.

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SYLLABUS

PLC Syllabus

- PLC Fundamentals - (Block diagram of PLC's) Applications and Types of Transformers
- Selection of PLC components (Power supply, CPU, I/Os List , Communication bus Various ranges available in PLC's)
- I/O list selection /li>
- Open-Circuit and Short-Circuit Tests
- Types of Inputs & outputs / Source Sink Concepts
- Parallel Operation of Transformers
- Wiring of the I/O devices
- Architectural Evolution of PLC
- Introduction to the field devices
- Types of Inputs & outputs / Source Sink Concepts
- Wiring of the I/O devices
- Concept of flags and Scan cycle execution
- Concept of flags and Scan cycle execution
- Setting up PLCs / Connecting CPU, I/O modules, Rack, Backplane and Communication bus
- Connecting Field devices to PLCs I/Os

SCADA System Syllabus:

- SCADA system application (Oil GAS / factory /Metro/ Solar Power Plant /Steel Plant)
- Calculation SCADA tag.
- Selection of Software basis of SCADA Tag.
- Creating Database of Tags
- SCADA Screen /Creating & Editing graphic display with animation
- Data Entry / Start Stop command
- Analog entry
- Sizing, Movement, Blinking, Visibility, Filling
- Trending
- Creating & Accessing Real-time
- Creating & Accessing Historical Trend
- Creating Alarms & Events
- Connectivity with the different hardware
- Communication protocols (modbus/ TCP/IP)
- Communication with PLC
- Communication with Data Acquisition System
- Troubleshooting the application
- Fault diagnostics and error handling
- Sorting communication problems

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Data Communication Protocols

- OPC UA
- OPC DA
- Profi NET

Profibus

- MQTT

OPC Channel / Matrikon Simulation IoT

Data Acquisition

- Data Sources
- Data Destinations
- Data Acquisition in OPC Classic
- Data Acquisition in OPC UA

Data Management

- Sharing Real-Time Data
- Sharing Historical Data
- Redundancy

Different Technologies Platforms

- Python
- Java
- .NET
- PHP
- Node Red

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Top IoT SCADA Competitors

- ABB
- SIEMENS & Schneider Electric
- Others

IOT Standards

- Requirement of international standard (case study)
- IOT standards in practice.
- Operating platforms /systems

Components of IOT System.(Lab)

- Design of IOT systems
- Development of prototypes.

Relevance of IOT for the future.

- IOT in everyday life
- Internet of Everything
- IOT and Individual Privacy.

IOT Applications.

- Lighting as a service (case study)
- Intelligent Traffic systems (case study)
- Smart Parking (case study)
- Smart water management (case study)

IOT for smart cities (Case study)

IOT in Indian Scenario

- IOT and Aadhaar
- IOT for health services.
- IOT for financial inclusion.
- IOT for rural empowerment.

Challenges in IOT implementation.

- Big Data Management.
- Connectivity challenges.
- Mission critical applications.