NEW HORIZON COLLEGE OF ENGINEERING

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Workshop
On
"Basics of PLC and Scada"

Participants: 3rd Semester Students **Date:** 29-10-2026

Brief Description of the Event

On 29th October 2026, hosted a workshop on "Basics of PLC and Scada." The session was conducted by Mr. Vinay M, PLC and Scada Engineer, Skytech Infinite Platform Ltd, Bangalore.

The Department of Artificial Intelligence and Machine Learning at New Horizon College of Engineering organized a workshop titled "Basics of PLC and SCADA" on 29 October 2026 from 10:30 AM to 12:30 PM in Room C-503 for third-semester students. The session was designed to introduce students to two important technologies used in industrial automation: Programmable Logic Controllers (PLCs) and Supervisory Control and Data Acquisition (SCADA) systems.

Industrial automation combines sensing, control, communication, monitoring, and data acquisition to make industrial processes safer, more consistent, and more efficient. An understanding of PLCs and SCADA helps students connect computing concepts with real-world applications in manufacturing, utilities, process industries, and smart infrastructure.

Objectives of the Workshop:

- To introduce the fundamental concepts and terminology of industrial automation.
- To explain the role of a Programmable Logic Controller in monitoring inputs and controlling outputs.
- To introduce SCADA architecture and its role in supervisory monitoring, data collection, and visualization.
- To distinguish between PLC-level control and SCADA-level supervision.
- To relate industrial automation concepts to practical applications and career opportunities.

- To encourage students to explore the integration of sensors, actuators, controllers, communication networks, and software.

Key Points Covered:

- Introduction to Industrial Automation:

The session introduced the fundamentals of industrial automation and its importance in improving productivity, operational efficiency, accuracy, and safety. The role of automated systems in manufacturing and process industries was highlighted.

- Programmable Logic Controller (PLC):

The basic architecture and working principles of PLCs were discussed. Key components, including the CPU, input/output modules, sensors, and actuators, were explained. The PLC scan cycle and the role of Ladder Logic in implementing industrial control operations were introduced.

- Supervisory Control and Data Acquisition (SCADA):

The fundamental concepts and architecture of SCADA systems were presented. The role of SCADA in real-time data acquisition, process visualization, alarm monitoring, historical data storage, and centralized supervision of industrial processes was explained.

- Human-Machine Interface (HMI):

The importance of HMI in industrial automation was highlighted, focusing on graphical process visualization, equipment status monitoring, display of process parameters, alarm notifications, and operator interaction with control systems.

- Integration of PLC and SCADA:

The complementary roles of PLC and SCADA in industrial control systems were explained. While PLCs execute control logic and operate connected equipment, SCADA systems facilitate supervisory monitoring, data visualization, and operational analysis.

- Industrial Applications:

Applications of PLC and SCADA in manufacturing, conveyor systems, water treatment plants, power systems, and process industries were outlined. These technologies enable automated operations,

continuous monitoring, and improved process reliability.

- Relevance to AI and Machine Learning:

The potential integration of industrial automation with AI and Machine Learning was highlighted. Industrial data can support predictive maintenance, anomaly detection, equipment performance analysis, and process optimization.

Outcome:

The workshop topic provided students with an understanding of fundamental industrial automation concepts, PLC and SCADA functionalities, and their practical applications. It also introduced opportunities for further learning in industrial automation, Industrial Internet of Things (IIoT), and AI-based industrial analytics.

- Define PLC and SCADA and explain their primary purposes.
- Identify the major hardware and software elements of a basic PLC-based control system.
- Describe the role of sensors, input/output modules, actuators, and control programs.
- Explain how SCADA/HMI tools support monitoring, visualization, alarms, and historical data review.
- Differentiate local control performed by a PLC from supervisory functions provided by SCADA.
- Recognize industrial application areas and identify opportunities for AI/ML-based analytics using process data.

By the end of the workshop, participants gained:

- Improved awareness of industrial automation concepts and terminology.
- A clearer connection between classroom learning and industrial engineering practice.
- Awareness of how controllers, sensors, communication systems, and visualization software work together.
- Exposure to career pathways related to automation, control systems, industrial IoT, and operational data analytics.
- A foundation for further practical learning through PLC programming, HMI configuration, and SCADA demonstrations.

Activities Conducted: NIL

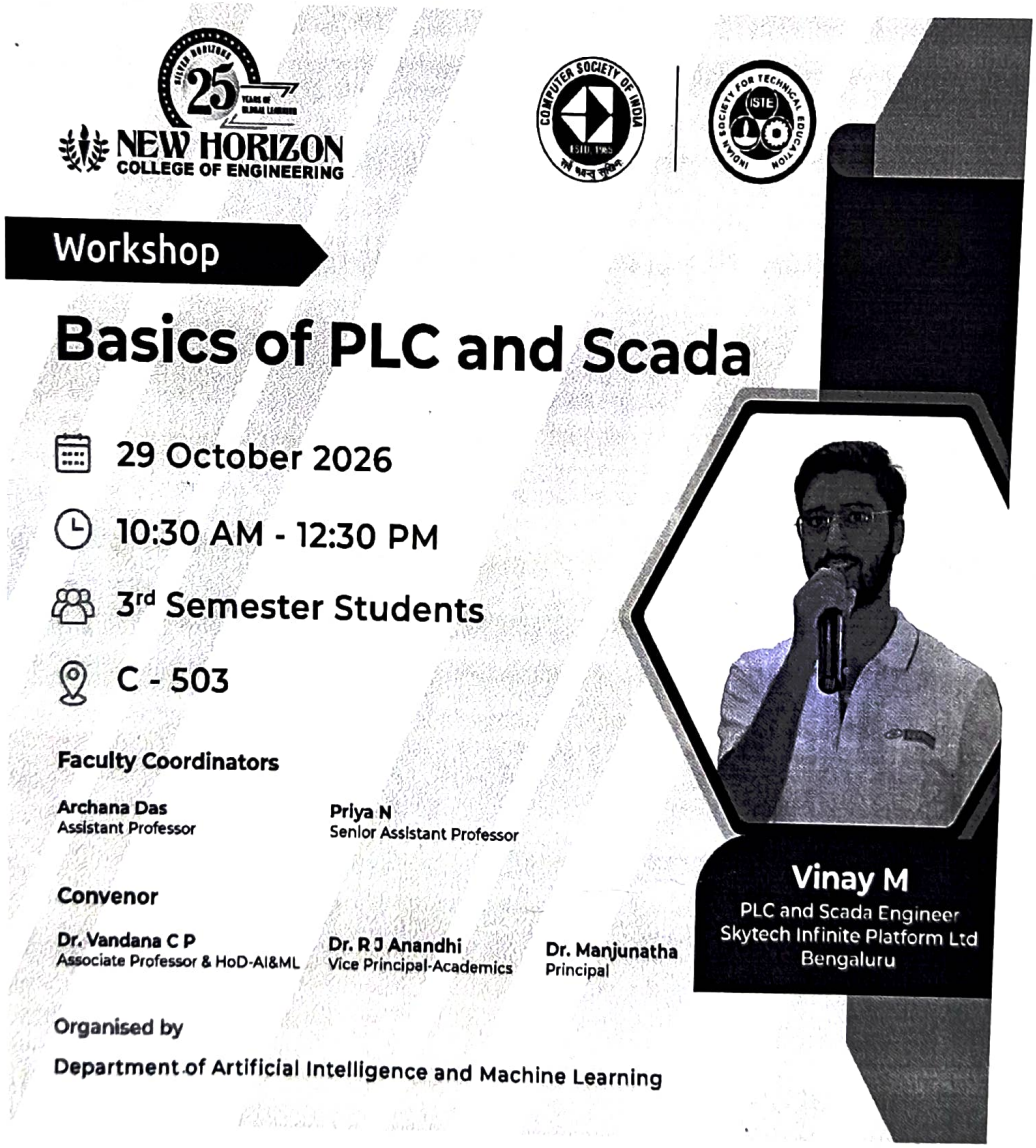
No. Of Participants: 60

Winners (if any, for activities conducted): NA

Guest Details (Name, Designation, Organization, Location) :

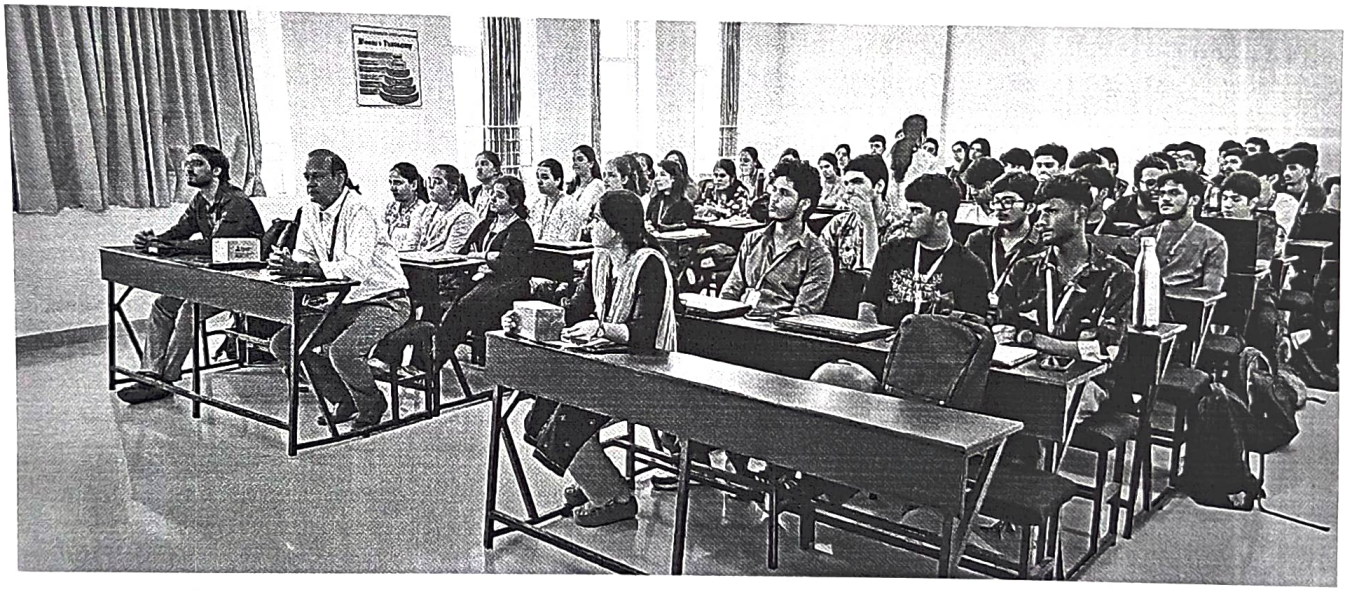
Mr. Vinay M, PLC and Scada Engineer, Skytech Infinite Platform Ltd, Bangalore.

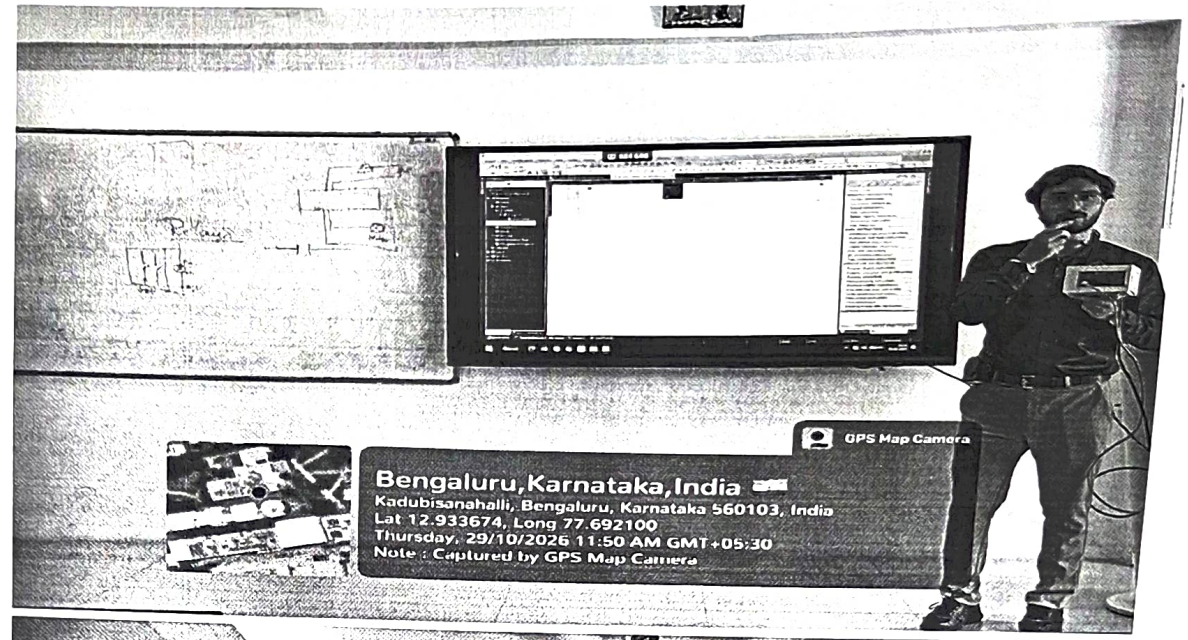
The brochure of the event :



Glimpse of an Event









Faculty Coordinator

Archana Das
Priya N

HOD-AIML

Dr. Vandana.C.P
HOD
Department of
Artificial Intelligence and Machine Learning
New Horizon College of Engineering
Ring Road, Bellandur Post, Bangalore - 560 103