

Innovative technology learning software, for theoretical and experimental training



A Programmable Logic Controller (PLC) is an industrial computer control system that continuously monitors the state of input devices and makes decisions based upon a custom program to control the state of output devices. In Simtel PLC software we will study fundamentals and applications of Sensors, Brain, Actuator, Electronics Components, Display Devices, Ladder Programming and application.

Topics:

- **Industrial Automation and Its Tools**
PLC, SCADA, HMI, Artificial Intelligence Network (ANN), DCS & Robotics
- **Role of PLC in Automation**
- **History of PLC**
- **PLC Introduction**
- **Types of PLC**
Mini, Micro & Rack
- **Block diagram of PLC**
- **Working of PLC**
- **Sinking and Sourcing Concept**
- **PLC Program Cycle**
- **Input Devices**
 - Switches
 - Introduction
 - Switch State
 - Basic Switch Configuration
 - Toggle Switch
 - Slide Switch
 - Pushbutton
 - Rocker Switch
 - DIP Switch
 - Reed Switch
 - Limit Switch

Sensors

- Introduction
- Type of Light Sensor
- Types of Temperature Sensor
- Proximity Sensor
- Gas Sensor
- Incremental encoder
- Motion Sensor
- **Actuators**
 - DC Motor
 - Stepper Motor
 - Servo Motor
 - Solenoid Valve
 - Seven Segment Display
 - Contactor
 - Solid State Relay
 - Induction Motor
- **Programming Language of PLC**
 - Ladder Diagram
 - Statement List
 - Structured Text
 - Functional Block Diagram
 - Sequential Functional Chart
- **Introduction of PLC Programming Software**
 - Winproladder
 - TIA Portal
 - RSLogix Micro English

Types of Communication Protocol

- Profibus
- Profinet
- **Programming Concept**
 - Normally Open and Normally Close Contact
 - Set and Reset
 - Memory Bit
 - Types of Logic Gates
 - Timer
 - Counter
 - PWM
 - Compare
 - ADC
 - DAC
- **Example Ladder Program**
- **Variable Frequency Drive (VFD)**
- **Introduction of HMI**
- **Introduction of SCADA**
- **Introduction of DCS**