SIEMENS

Automation - SIMATIC S7 with STEP 7 v5

S7 Programming with Statement List (STL)

General Information

Course Code: SCT-S7STLP2B
Length: 3½ Days

Audience

This course is intended for SIMATIC S7-300/400 PLC users with basic programming experience in designing and sustaining SIMATIC automation systems and associated Statement List application programs.

Prerequisites

- S7 Programming 1

OR

- S7 Automation Maintenance 2

Profile

The Statement List programming course is designed to provide participants with STL programming skills using a blended learning approach utilizing classroom lecture, instructor demonstration and hands-on tasks. These tasks increase Siemens STEP7 Totally Integrated Automation (TIA) skills through the creation of a Siemens TIA project.

This course reviews S7 programming concepts and structures. Each option is detailed using advanced programming structures. Multiple addressing methods and special program control instructions are covered, presenting the student with even more flexibility in programming.

Students should have a solid working knowledge of STEP7, SIMATIC Manager and the basic diagnostics and editor tools. This course provides comparisons of program elements and basic program code examples in STL and traditional Ladder Logic (LAD). This course reviews the most typical program elements used with their STL representation. This course does not cover program design strategy of programming best practices but provides multiple examples of program code segments written in STL.

The course format consists of equal parts instruction and hands-on exercises

Objectives

Upon completion of this course, the student shall be able to:

- Create and troubleshoot basic bit logic operations in a program using LAD, FBD or STL.
- Create or troubleshoot a basic STEP7 program written in STL.
- Perform basic data moves, conversions and storage using STL.
- Open typical system functions and review parameters, assignments and variables.
- Use a typical Data Block function for Data management and diagnostics.
- Open typical Organization Blocks and understand their use in a structured program.
- Configure a typical Analog signal and manage input and output analog data using STL.

Topics

1. Training Units and Addressing
2. SIMATIC Manager Review
3. Hardware Configuration
4. Binary Operations in STL
5. Digital Operations in STL
6. Data Blocks
7. Function Blocks
8. Organization Blocks
9. Analog Value Processing
10. STL Jump and Accumulator Instructions