MFET-670.01 PROJECT
AUTOMATED CAR WASH

Design, write, test and demonstrate a program that performs the operational sequence described below to automate a car wash. The car wash will consist of two zones and up to two cars can be washed at a time. The operations in each zone must be completed prior to cars moving.

Each zone will use a separate PLC. Data will be passed between zones using Produced/Consumed tags. Ladder diagram language can be used for most of the project. You must have at least one routine in each PLC with a language other than ladder diagram. A User-Defined Data Type (UDT) and at least one Add-On Instruction (AOI) is required.

Zone 1 will consist of an Entrance Door, Presoak, Foam Applicator and Scrubber operation.
Zone 2 will consist of a Rinse, Wax Applicator, Dryer and Exit Door operation.

Sequence of Operation:

1) Start system with selector switch.
2) Car arrives.
3) Open Entrance Door by using Cylinder.
4) Move car into Zone 1 simulated by Stepper Motor (1 revolution).
5) Close entrance door using Cylinder.
6) Run Presoak simulated by flashing the Light 5 times.
7) Run Foam Applicator simulated by Fan
8) Run Scrubber simulated by oscillating DC Motor (CW/CCW).
9) Move car to Zone 2 simulated by Stepper Motors (1 revolution).
10) Run Rinse simulated by oscillating DC Motor (CW/CCW).
11) Run Wax Applicator simulated by flashing the Light 5 times.
12) Run Dryer simulated by Fan.
13) Open Exit Door using Cylinder.
14) Move car out of car wash simulated by Stepper Motor (1 revolution).
15) Close exit door using Cylinder.
16) Display total cars waiting in zone 1 PLC and total cars washed in zone 2 PLC display.

Deliverables

- Initial Project Specification with any changes.
- Well-documented program that demonstrates good programming techniques.
- Ten minute presentation on the project.
- Paper summarizing the project scope, how you used the AOI, alternate language, and UDT's. Include challenges encountered and how you overcame them, and what was learned.