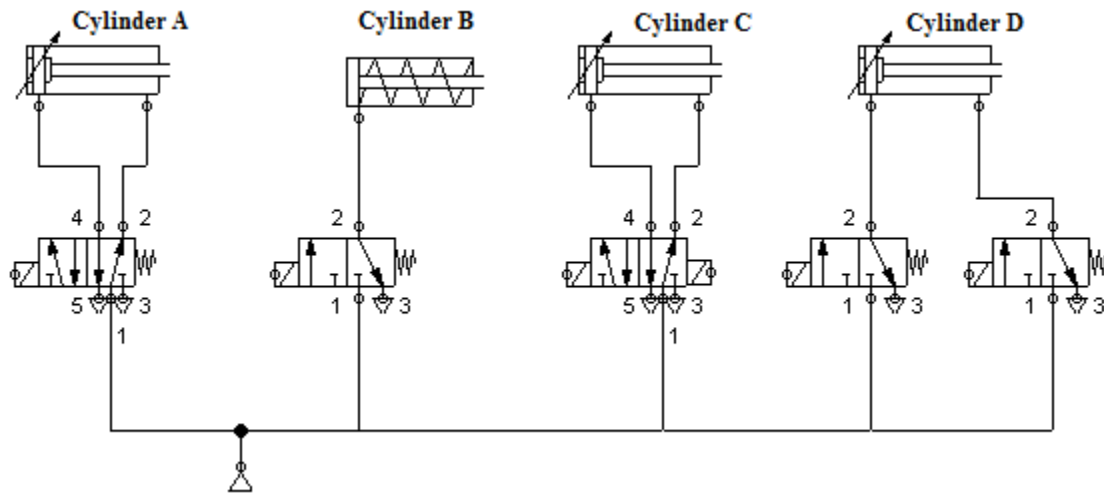




For the system in the figure below, given the address in the next table, design a **PLC ladder diagram** for each of the following tasks



Hardware	Address
A is fully retracted	I0.0
A is fully extended	I0.1
B is fully retracted	I0.2
B is fully extended	I0.3
C is fully retracted	I0.4
C is fully extended	I0.5
D is fully retracted	I0.6
D is fully extended	I0.7

Hardware	Address
Cylinder A advances	Q0.0
Cylinder B advances	Q0.1
Cylinder C advances	Q0.2
Cylinder C retracts	Q0.3
Cylinder D advances	Q0.4
Cylinder D retracts	Q0.5
"Start"	I1.0
"Stop" (NC)	I1.1
""Reset" "	I1.3



Process Control (110405541).

Spring 2020-2021
Examples / Session 3

Eng. Sarah Al-Bargothi

Number	Level	Required Tasks
1.	Esay	If "start" is pressed once cylinder B will reciprocate until stop is presed
2.	Esay	If "start" is pressed once cylinder C will reciprocate until stop is presed
3.	Esay	If "start" is pressed once cylinder D will reciprocate until stop is presed
4.	Medium	If start is pressed once the following sequence will continue untill stop is presed: 1. B will fully advance. 2. D will fully advance. 3. B will fully retract. 4. D will fully retract.
5.	Medium	If start is pressed once the following sequence will continue untill stop is presed 1. B will fully advance. 2. D will fully advance. 3. Both cylinder will retract.
6.	Hard	Each time "Start" is pressed 1. B will fully advance. 2. D will fully advance then retract. 3. B will fully retract. (Do not use counters)
7.	Extra Hard	If start is pressed once the following sequence will continue untill stop is presed: 1. B will fully advance. 2. D will fully advance and retract twice. 3. B will fully retract. (Do not use counters)