



Automation Lab. 3

Task 3.a

The task is to...

- **Create an HMI** depicting the conveyor system in the lab.
- **All sensors and actuators should be represented** on the HMI.

Initial state:

- A single job is placed on the upper conveyor, to the left of block B3.

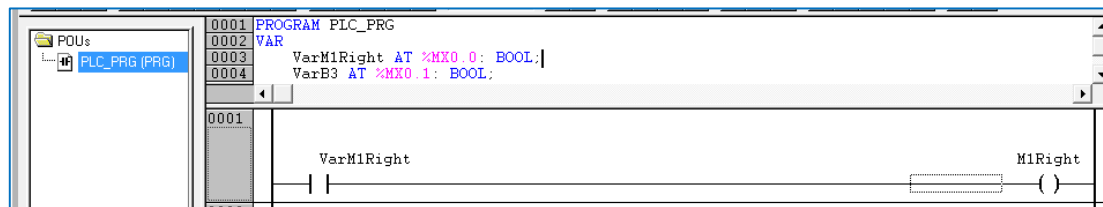
Condition:

- The HMI will be run together with the CoDeSys program for Task 1.a.

Task 3.b

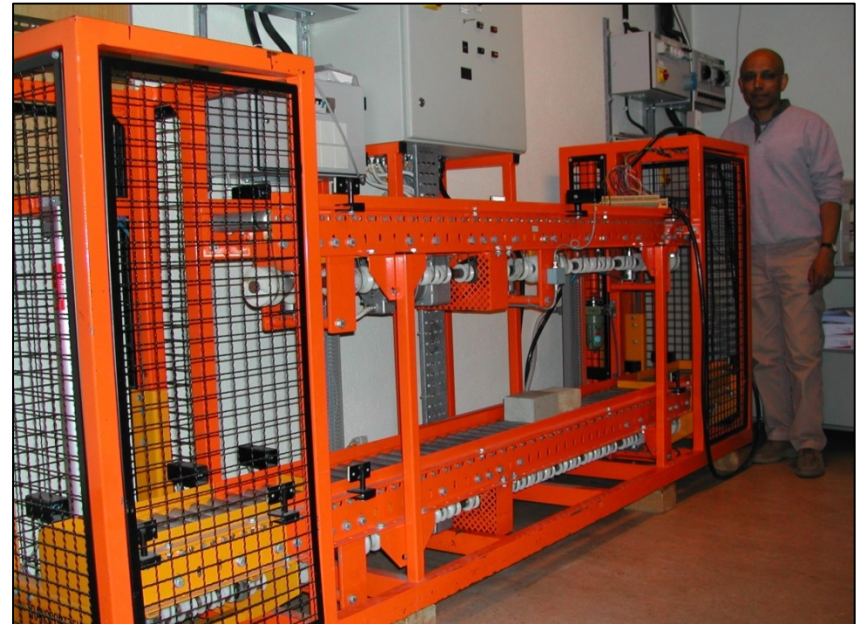
The task is to...

- **Operate** the conveyor system and run Task 1.a using the HMI interface (E.g. you press a button to run a conveyor, move the lift up etc.).
- You will need to add buttons/toggles to the HMI interface developed in Task 3.a.
- Write a CodeSys program that will act as an intermediate between the HMI and the conveyor system.



Communication and HMI

- The project setup from Lab 1.
- *InTouch WindowMaker* is used for creating the HMI.
- All sensors and actuators should be represented on the HMI (e.g. sensor with job in front would appear in red color).
- *InTouch WindowViewer* is used for running the HMI.



Tagnames

- It is necessary that you create the correct “Tagname” and “Item” for all the inputs and outputs.
- Refer to the list of sensors and actuators in the Appendix of the Lab Manual.

INPUTS:					
Nr	Name / Tag	I/O	Slot/Port	Type	Item
1	S1	AT	%IX0.0	BOOL;	000001
2	S2	AT	%IX0.1	BOOL;	000002
3	S3	AT	%IX0.2	BOOL;	000003
4	S4	AT	%IX0.3	BOOL;	000004
5	S5	AT	%IX0.4	BOOL;	000005
6	S6	AT	%IX0.5	BOOL;	000006
7	S7	AT	%IX0.6	BOOL;	000007
8	S8	AT	%IX0.7	BOOL;	000008
9	S9	AT	%IX0.8	BOOL;	000009
10	Lift1Up	AT	%IX0.9	BOOL;	000010
11	Lift1Down	AT	%IX0.10	BOOL;	000011
12	Lift2Up	AT	%IX0.11	BOOL;	000012
13	Lift2Down	AT	%IX0.12	BOOL;	000013
14	D1	AT	%IX0.13	BOOL;	000014
15	D2	AT	%IX0.14	BOOL;	000015
16	D3	AT	%IX0.15	BOOL;	000016
17	D4	AT	%IX1.0	BOOL;	000017
18	D5	AT	%IX1.1	BOOL;	000018
19	Empty1	AT	%IX1.2	BOOL;	000019
20	Empty2	AT	%IX1.3	BOOL;	000020

OUTPUTS:					
Nr	Name / Tag	I/O	Slot/Port	Type	Item
1	M1Left	AT	%QX0.0	BOOL;	100513
2	M1Right	AT	%QX0.1	BOOL;	100514
3	M2Left	AT	%QX0.2	BOOL;	100515
4	M2Right	AT	%QX0.3	BOOL;	100516
5	M3Left	AT	%QX0.4	BOOL;	100517
6	M3Right	AT	%QX0.5	BOOL;	100518
7	M4Left	AT	%QX0.6	BOOL;	100519
8	M4Right	AT	%QX0.7	BOOL;	100520
9	Lift1	AT	%QX0.8	BOOL;	100521
10	Lift2	AT	%QX0.9	BOOL;	100522
11	B1	AT	%QX0.10	BOOL;	100523
12	B2	AT	%QX0.11	BOOL;	100524
13	B3	AT	%QX0.12	BOOL;	100525
14	B4	AT	%QX0.13	BOOL;	100526
15	B5	AT	%QX0.14	BOOL;	100527
16	Empty3	AT	%QX0.15	BOOL;	100528

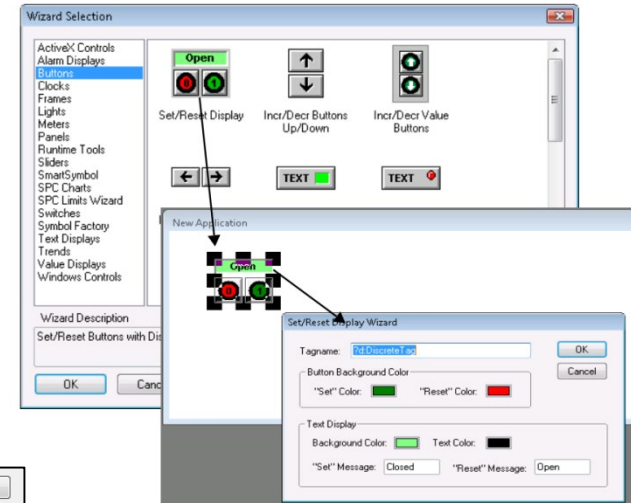
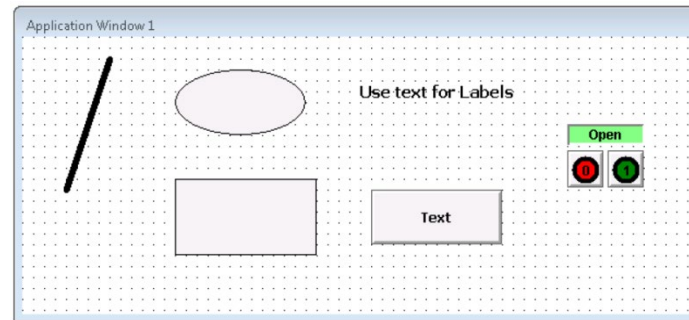
Tagname

Item

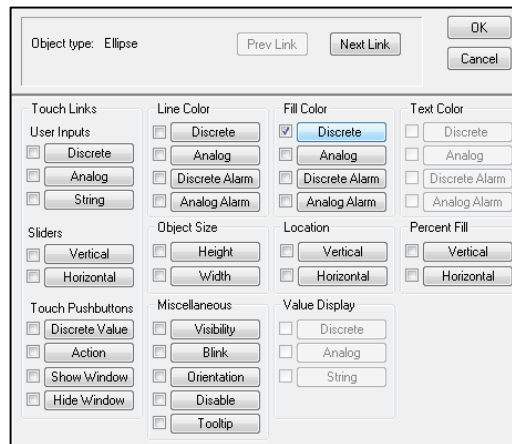
Objects

Basic types:

- Lines
- Shapes
- Text
- Buttons



Properties



IMPORTANT!

Before the lab...

- Read the lab manual.
- Make a preliminary sketch depicting the Lab conveyor system with all the sensors and actuators.
- Make note of the properties of each of the sensors and actuators that you will use (i.e. How will you show a sensor or a block has a true/false value? moving lifts? conveyors moving to the right or left?).

IMPORTANT!

Before the lab...

- Lab3 from Feb 28th to Mar 2nd
- 10 students per session in groups of 2.
- Doodle link for lab booking:
https://doodle.com/poll/22sbg2nba387xvn3?utm_source=poll&utm_medium=link
- Lab location: Norra Apparathallen, M-Huset (directions in course website)