Academic Year 2019/20

Project Title: Mechatronics Project
Project ID: 1M20504 WSS
Supervisor: Mr Peng Wai Meng

Objectives:

- Research and read up the documentation on Festo's Modular Production System along with Tutorial Videos on YouTube.
- Discover and Explore Structured Text Programming online using Google.
- Come to Lab for training on Mechanical and Programming.
- Disassembly and Reassembly of the Distribution station mechanically and pneumatically.
- Equip the station with pneumatic tubing from the wall.
- Enable Communication between the Programmable Logic Controller (PLC), Computer and the Modular Production System (MPS) by using LAN Communication through a Network Switch.
- Differentiate between the Outputs and Inputs and Declare the variables – I (Inputs), Q (Outputs).
- Program using the interface provided by CoDeSys and TIA Portal.
- Investigate the differences between the Current and Older Modular Production System.
- Sequence the Reset and Start Sequence.
- Enhance on the program when the station is occupied.
- Program the Blinking LED's and function on the Control Board, Start and Reset Button.
- Combine the program to produce a line of functioning stations.
- Verify if the stations are working as described.
- Program, Design and Visualize the HMI Controller.

▼Start of MP-SIP ▼End of MP

ID	Task/Activities Name	Apr				May				June				July					Aug				Sept			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4
	Ong Jing Xian (170XXXXE)																									
1	Training on WSS Training Stations																									
	a. Mechanical Disassembly and Reassembly of Distribution Station																									
	b. Learn Structured Text. (TON, BLINK, IF, CASE)																									
	c. Start Programming on Distribution, Testing, Handling, Sortingand Pick Place. Start and Reset Sequence.																									
	d. Control Panel, Start and Stop Button, Blinking LED																									
2	Learning, Testing and Coding on Siemens PLC.																									
	a. Pairing Computer and PLC on the same Networkusing a Network Switch.																									
	b. Connect Electrical and Pneumatics to Mains.																									
	c. Figure out Inputs and Outputs. Use Watch Table to monitor Inputs and Outputs																									
	d. Start Programming on Sorting Stationusing TIA Portal.																									
	e. Create Tags, Main and Counter Module																									
3	Combine the functions of the 3 station together.																									
	a. Coding Start and Reset Sequence for Measuring Station.																									
	b. Coding Start and Reset Sequence for Distribution Station																									
	c. Implementtheblinking LED's and function of the Control Panel forthe 3 Stations, Sorting, Measuring and Distribution.																									
	d. Implement waiting when the next downstream station is occupied.Wire Up the Control Panel Input and Output.																									
	e. Combine the code into one project.																									
4	Put/Get Function Block and HMI																									
	a. Implement the Put/Get Function Block.																									
	b. Add and Program a HMI Screen.																									
	c. Link HMI Tags with PLC Tags.																									
	d. Layout the screen with individual station controls and a Master one.																									
	e. Combine the code into one project.																									
5	Touch up implementation & helping other group members																									
	a. Add sequence for upstream station on the Distribution Station.																									
	b. Increase Delay for Measuring and Distribution Station for Reset Sequence to prevent jamming.																									
	c. Help other group members with their PUT command.																									