

IEEE vTOOLS Event Reporting

IEEE RAS Malaysia Chapter



Title of Event:	"Project for Industrial Automation (MCTE 3373)"			
Event	<input type="checkbox"/> Physical / <input checked="" type="checkbox"/> Virtual			
Description:	We arranged a project competitions among the students who took the course Industrial Automation. The project was related to simulate a PLC based automation process. We provided certificates of appreciation for the top performers. The detail of the event description is attached herewith.			
Keywords:	Robotics, Project			
Category:	<input type="checkbox"/> Professional	<input checked="" type="checkbox"/> Technical	<input type="checkbox"/> Non-Technical	<input type="checkbox"/> Administrative
Sub-category:	Professional:	<input type="checkbox"/> Continuing Education	<input type="checkbox"/> Professional Development	<input type="checkbox"/> Industry Relations <input type="checkbox"/> Professional (Other)
	Nontechnical:	<input type="checkbox"/> Social	<input type="checkbox"/> Awards Dinner	<input type="checkbox"/> Pre-Univ. activities <input type="checkbox"/> Nontechnical (Other)
	Administrative:	<input type="checkbox"/> Vice chair		<input type="checkbox"/> Officer training
Date and Time:	3/06/22-21/06/22	Start Time:	End Time: 11:59 PM	
Event Location:	International Islamic University Malaysia			
Organizational Unit:	Department of Mechatronics Engineering and Autonomous Systems and Robotics Research Unit			
Attendance:	No. of IEEE attended:	0	No. of Guests/students attended:	>20
Registration:	<input type="checkbox"/> No registration required			
	<input type="checkbox"/> Registration required			
Registration Fees:	-			
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Photo/ Image

Industrial Automation

Assignment on PLC



PLC ladder logic design for a robotic workcell

- A conveyer belt is carrying pallet with raw material for CNC machining.
- When the **pallet stops at the** CNC machine center the PLC detects it. PLC then **activates a digital output** to the robot controller for a robot program to be initiated to take the raw material from the pallet and load on the machine.
- Once the part is loaded on the CNC machine **the PLC senses it by appropriate sensors**. Once PLC senses the part on the CNC machine it will start the pre-defined CNC program by sending **a digital signal to the CNC controller** thru PLC's standard digital output.
- Once the CNC program is completed the CNC controller will **send digital signal to the PLC to notify**.
- Once PLC receives that notifying signal it will initiate the second robot program to unload the part.
- The PLC need to keep track of the **total number of the completed parts**.
- Once the **total number reaches a pre defined value** the PLC should turn on an indicator light.



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Your Task

- Simulate the program using RSLogiX.
- Provide a video presentation of maximum 10 mins to explain your design process. Also demonstrate your simulation.
- Submit a 2 page report on how you chose and implemented the sensors for the above task. Also explain the working procedure of your ladder logic sequence using a concise format.

