LAB 1 - Talking Points

The intent of this spreadsheet is to provide some thoughts as to the sequence of operation required.
Although some PLC Programs have been sucessful in using Step Sequencers, Condition and Event Driven logic determines what Action will take place for this LAB.
Students need to be able to think through the process and determine what actions are simultaneious and which motions are interdependant.
There should be discussion regarding the lack of Inputs making deterministic evaluation difficult. Example: How can the position of X & Z Axis be determined without direct sensing?

Only the most critical Internal PLC Conditions are spelled out here (such as the TMR for Part in Place and Gantry Position Status)

Lids Conveyor

Input	Status	Action / Output	Status
E-Stop	OFF		
Stop	OFF		
Auto SS	ON		
Start PB	ON		
		In Cycle	ON
		Clamp	OFF
		Raise Positioner	OFF
		Conveyor	ON
		Emitter	Forced ON
Detect Part	ON		
		Part in Place TMR	ON
Part in Place TMR	DONE		
		Conveyor	OFF
		Clamp	ON
		Clamp	OFF
		Conveyor	ON
		** CLEAR	ON

Pick and Place

Input	Status	Action / Output	Status
		Advance X	OFF
		Lower Z	OFF
		Lower Z	ON
Part Detected	ON		
		Grab	ON
		Lower Z	OFF
** Z - Raised	ON		
		Advance X	ON
** X - Advanced	ON		
		Lower Z	ON
** Z - Lowered	ON		
		Grab	OFF
		Lower Z	OFF
		** CLEAR	ON

Bases Conveyor

Input	Status	Action / Output	Status
		Clamp	OFF
		Raise Positioner	OFF
		Conveyor	ON
		Emitter	Forced ON
Detect Part	ON		
		Part in Place TMR	ON
Part in Place TMR	DONE		
		Conveyor	OFF
		Clamp	ON
		Clamp	OFF
		Raise Positioner	ON
		Conveyor	ON
Part Exit	ON		
Part Exit	OFF		
		Counter	+ 1
		** CLEAR	ON

** Internal Bit Required