PLC 1 Lesson 6 Lab 2 – Counters

Count Up and Down Counters

Program Name: PLC 1 L6-2

Create a New program and name your program "**PLC 1 L6-2**".

Programming Guidelines:

Design a RSLogix 500 ladder logic program that will perform the functions described for each exercise. Adhere to the following guidelines:

- Use the provided/simulated pushbuttons, lamps, and other available I/O.
- Plan your input and output assignments before you start programming.
- **RUNG TITLES**: Place only one rung title on the top rung of your program. Make sure it is assigned to the rung and not the output. Place the name of the exercise here (e.g.: Logic Exercise 3, Motor Exercise 2, Counter Exercise 1, etc.). Do not place titles on remaining rungs as this will cause the start of a new page when printing.
- **RUNG COMMENTS**: In rung comment area, place your name then hit enter and add any comments related to the project. Add comments without titles to other rungs as needed to explain the intended function of that rung.
- **INSTRUCTION SYMBOLS**: Utilize instruction symbols that are given. If there are none noted, please create your own. [E.g.: SW3, LP2, LS7, CR4, etc.]
- **INSTRUCTION DESCRIPTIONS**: Insert instruction descriptions whenever possible. [E.g.: "capacitive sensor", Conveyor Limit Switch, Motor Control Relay, Master Control Relay, etc.]
- **Save and verify** your program before downloading! Then download your program to the PLC trainer and test to see that it works as intended.

Functional Specification:

- Develop a program that controls access to a public parking lot. When cars enter the parking lot a thru-beam sensor detects the car and raises the gate
- When the sensor no longer detects the car it will keep the gate up for 5 seconds and will increment a counter that tracks cars entering the lot.
- As cars leave the lot through the exit the count should be decremented. There is no gate for exiting.
- When the lot reaches capacity (25 cars) a "No Vacancy" sign should be illuminated, and the entrance gate disabled.
- Once a car exits and there is room the "No Vacancy" sign is turned off and gate is re-enabled.
- There should also be a pushbutton the attendant can press to reset the lot to an empty condition.

Type of Device	Description	Address
Prox Sw	Car at Gate	I:0/0
Prox Sw	Car Exited Lot	I:0/1
PB NO	Lot Reset	I:0/2
CR Coil	Gate Up Relay	O:1/0
CR Coil	"No Vacancy" Sign	O:1/1