Homework #1 ECE 461 / 661

Ladder Logic - Due Monday August 31st

Write a ladder-logic program to implement the following funcitons.

1) On-Off control for the lights

Inputs:

DI_00	DI_01	DI_02	DI_03	DI_04	DI_05	AI_02	AI_03
Red on	Red off	Yellow on	Yellow off	Green on	Green off	-	-

Outputs:

DO_00	DO_01	DO_02	DO_03
Red light	Yellow Light	Green Light	Blue Light

2) Single light control

- DI_00: Red light on, all others off
- DI_01: Yellow light on, all others off
- DI_02: Green light on, all others off
- DI_03: Blue light on, all others off.

3) T flip-flop. When you press DI_00, the red light toggles. If it was on, it goes off. If it was off, it goes on.

4) Logic Function:

Inputs:

DI_00	DI_01	DI_02	DI_03	DI_04	DI_05	AI_02	AI_03
A	B	C	D	E	F	-	-

- Red Light: Logic function X = ABC
- Yellow Light: Logic function Y = A+B+C
- Green Light: Logic function Z = AB+C