

Turning on/off lamps example 2

Problem Statement: Draw a ladder logic diagram to control the lamp output as per the given logic. Make use of a start and stop push button to turn on and off the system. Use switches to turn on and off the lamps.

START PUSH BUTTON

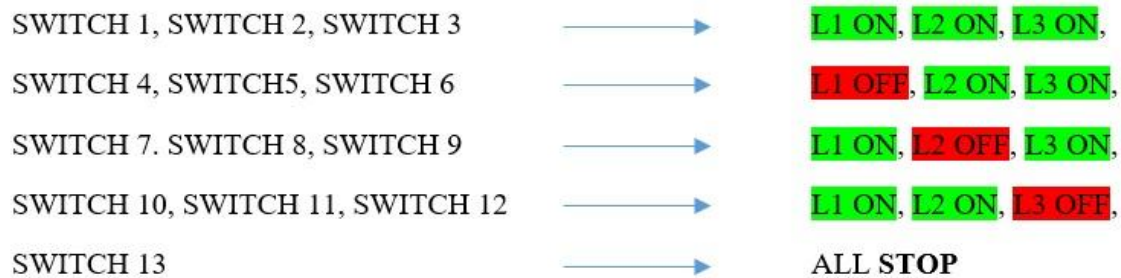


Figure 1. Assignments of buttons and switches

- Lamps L1, L2, and L3 will turn ON only when switches Switch1, Switch 2, and Switch 3 are turned ON. If any one of these three switches is off, lamps will not turn ON.
- Lamps L1 will turn OFF only when switches Switch 4, Switch 5, and Switch 6 are turned ON. If any one of these three switches is off, lamp L1 will not turn OFF.
- Lamps L2 will turn OFF only when switches Switch 7, Switch 8, and Switch 9 are turned ON. If any one of these three switches is off, lamp L2 will not turn OFF.
- Lamps L3 will turn OFF only when switches Switch 10, Switch 11, and Switch 12 are turned ON. If any one of these three switches is off, lamp L3 will not turn OFF.
- All lamps will turn OFF when switch 13 is turned ON.

	Class	Label Name	Data Type
1	VAR	start_1	Bit
2	VAR	s_1	Bit
3	VAR	s_2	Bit
4	VAR	s_3	Bit
5	VAR	s_4	Bit
6	VAR	s_5	Bit
7	VAR	s_6	Bit
8	VAR	s_7	Bit
9	VAR	s_8	Bit
10	VAR	s_9	Bit
11	VAR	s_10	Bit
12	VAR	s_11	Bit
13	VAR	s_12	Bit
14	VAR	s_13	Bit
15	VAR	isON	Bit
16	VAR	L_1	Bit
17	VAR	L_2	Bit
18	VAR	L_3	Bit

Figure 2. Local labels

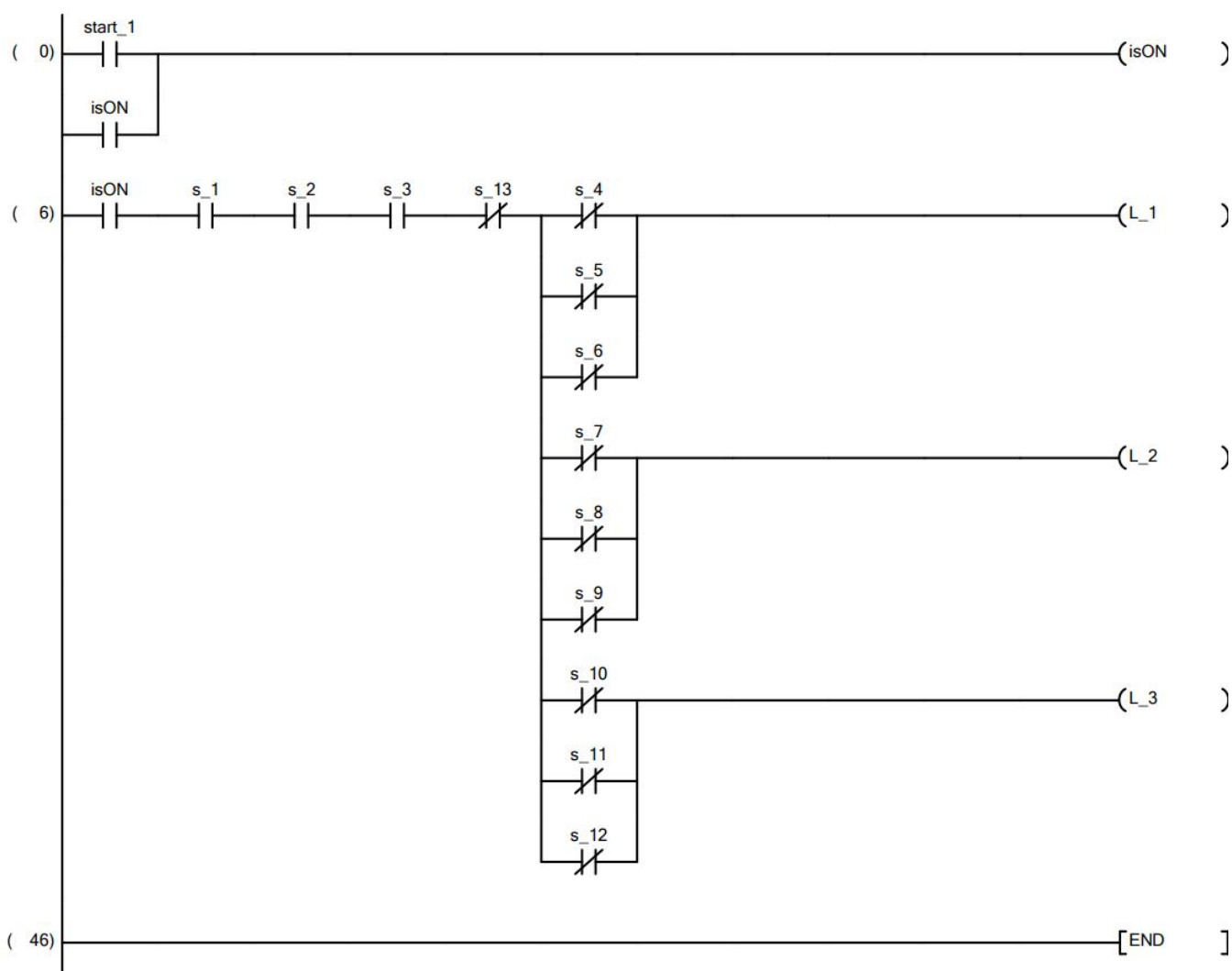


Figure 3. Ladder logic diagram