

Turning on/off 9 lamps using 6 switches

Problem Statement: Draw a ladder logic diagram to control the output as per the given logic. Make use of start and stop push buttons, 6 switches to turn on and off the 9 lamps.

START PUSH BUTTON

SWITCH 1	→	L1, L2, L3 ON
SWITCH 2	→	L4, L5, L6 ON
SWITCH 3	→	L7, L8, L9 ON
SWITCH 4	→	L1, L5, L9 OFF
SWITCH 5	→	L3, L4, L8 OFF
SWITCH 6	→	L2, L6, L7 OFF
STOP BUTTON	→	ALL STOP

Figure 1. Assignments of buttons and switches

	Class	Label Name	Data Type
1	VAR	push_1	Bit
2	VAR	push_2	Bit
3	VAR	isON	Bit
4	VAR	stop_1	Bit
5	VAR	start_1	Bit
6	VAR	switch_1	Bit
7	VAR	lamp_1	Bit
8	VAR	lamp_2	Bit
9	VAR	lamp_3	Bit
10	VAR	lamp_4	Bit
11	VAR	lamp_5	Bit
12	VAR	lamp_6	Bit
13	VAR	lamp_7	Bit
14	VAR	lamp_8	Bit
15	VAR	lamp_9	Bit
16	VAR	switch_2	Bit
17	VAR	switch_3	Bit
18	VAR	switch_4	Bit
19	VAR	switch_5	Bit
20	VAR	switch_6	Bit

Figure 2. Local labels

