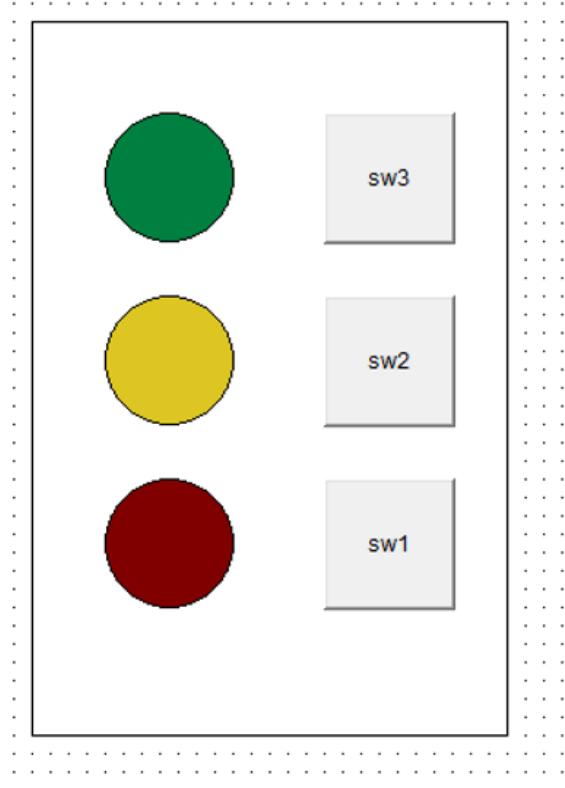
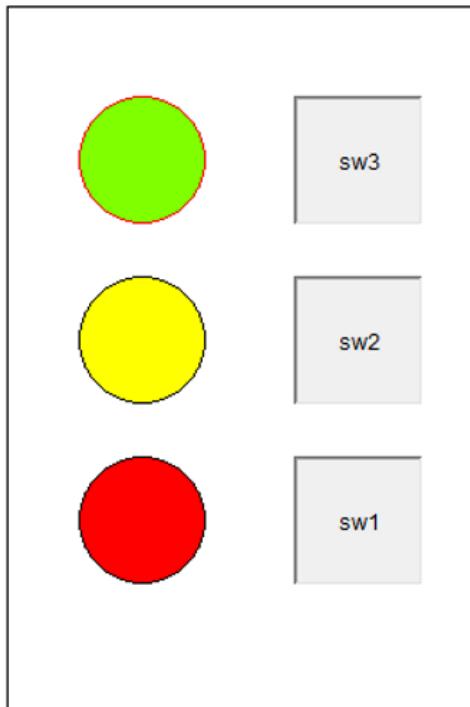


# Exercise 10

## Task 1

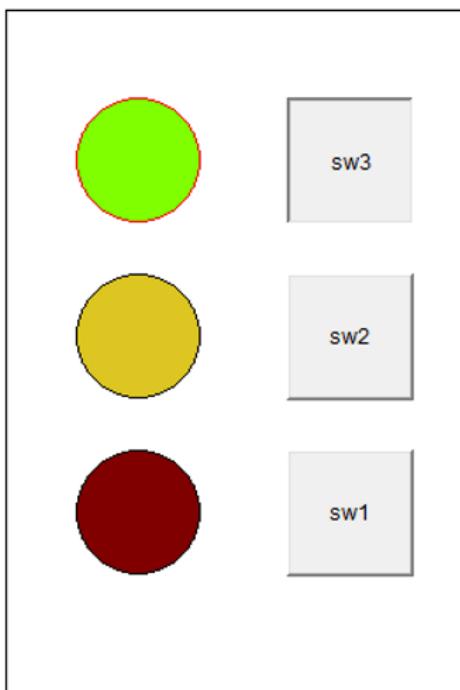
### Part 1





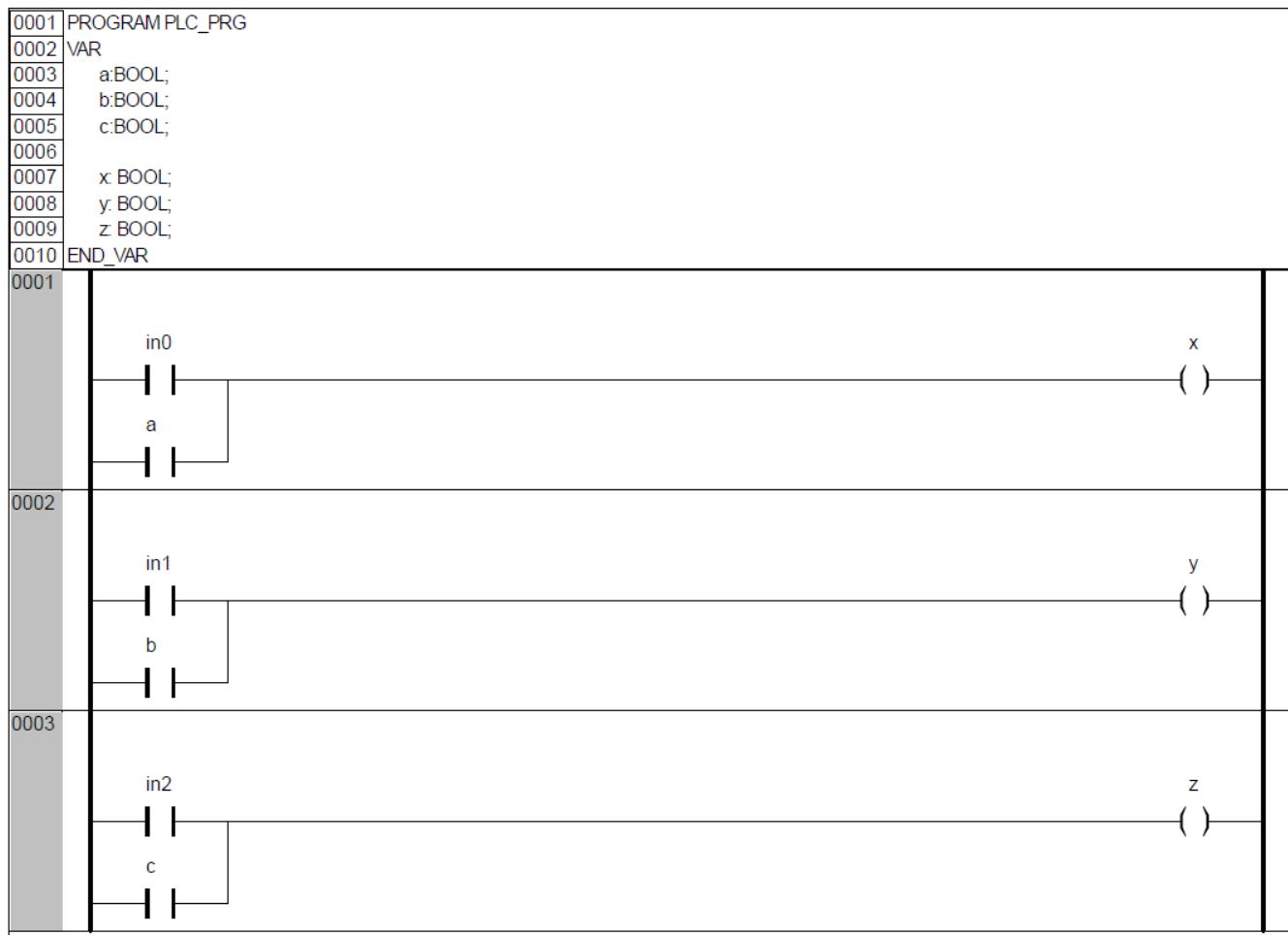
## Part 2

The virtual input takes priority



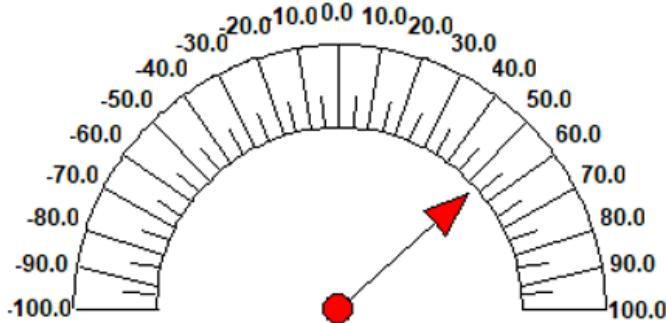
## Part 3

They could be made to control the same output like the example below. The physical inputs are in0,in1, in2 and the virtual inputs are a,b,c. The outputs are x,y,z.

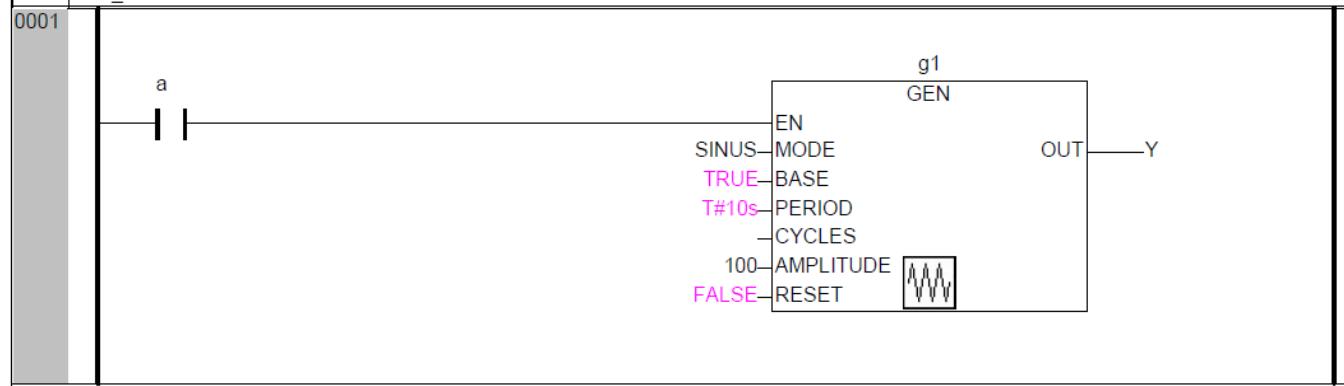


## Task 2

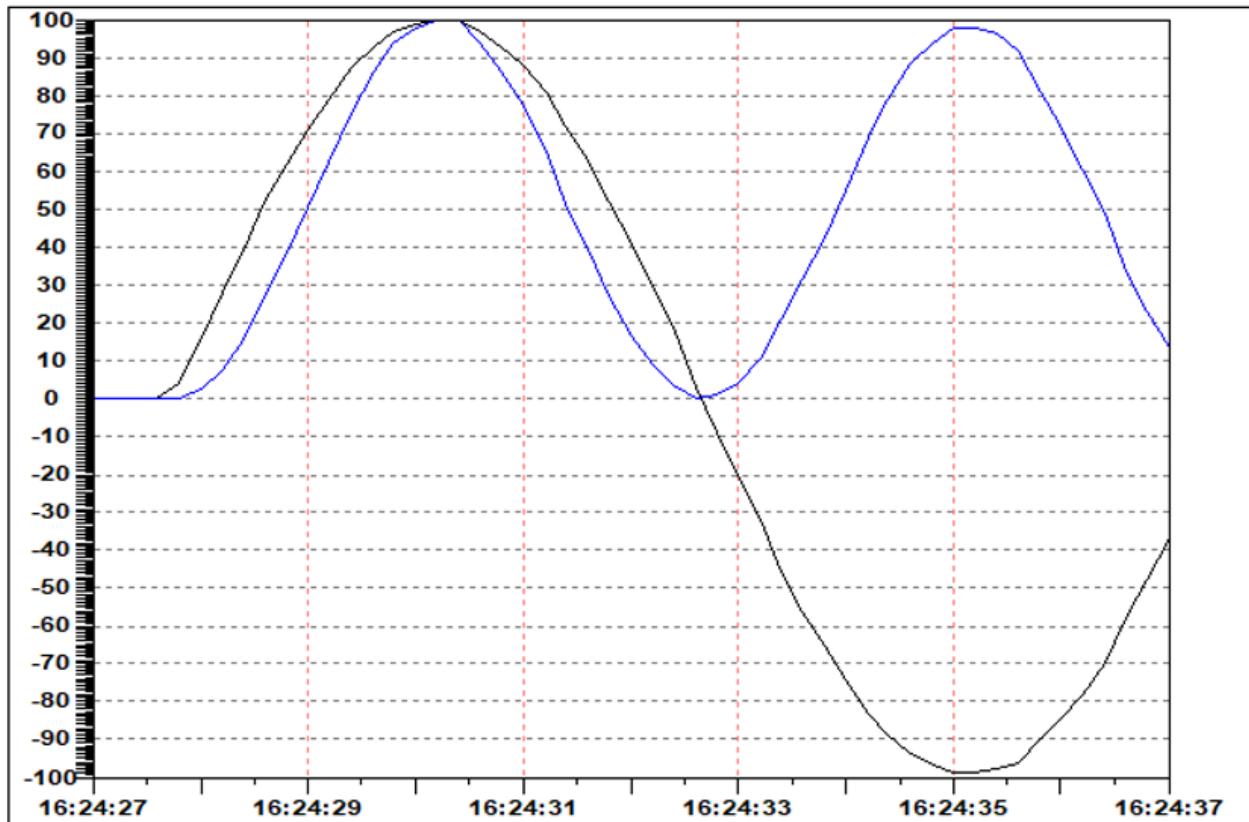
### Part 1

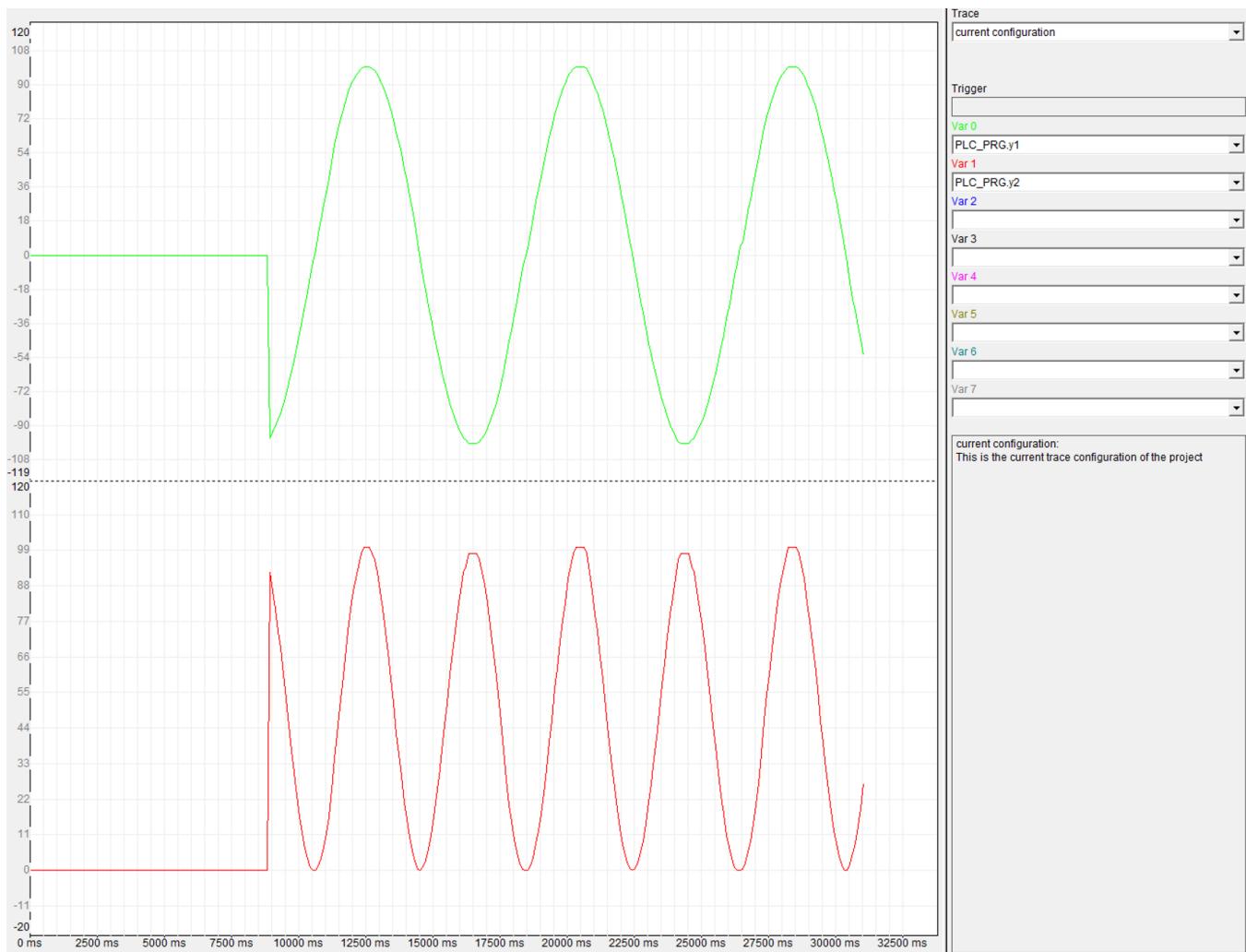


```
0001 PROGRAM PLC_PRG  
0002 VAR  
0003   a:BOOL:=TRUE;  
0004   Y:REAL;  
0005   g1: GEN;  
0006 END_VAR
```



## Part 2





## Part 3

The different elements in the logfile represent

The first element is the number of seconds passed since 1st of january in 1970(UNIX).

The second element is represents the milliseconds

The third element is the current date

The fourth element is the current time

The fifth element is the variable name

The sixth element is the variable value

The seventh element is the second variable name

The eight element is the second variable value

 ex10trace0 - Notepad

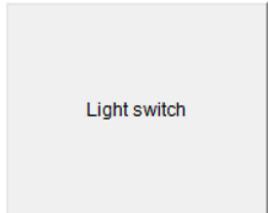
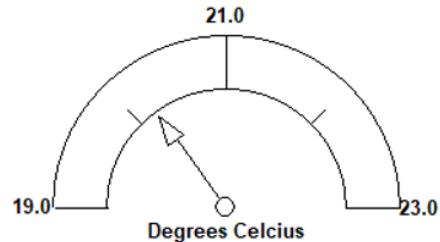
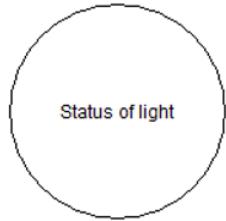
File Edit Format View Help

```
1713803574;59574285;22-04-2024;04:32:54;PLC_PRG.y1;12.000000;PLC_PRG.y2;1.440000;
1713803574;59574488;22-04-2024;04:32:54;PLC_PRG.y1;12.000000;PLC_PRG.y2;1.440000;
1713803574;59574691;22-04-2024;04:32:54;PLC_PRG.y1;24.000000;PLC_PRG.y2;5.760000;
1713803574;59574895;22-04-2024;04:32:54;PLC_PRG.y1;39.000000;PLC_PRG.y2;15.210000;
1713803575;59575098;22-04-2024;04:32:55;PLC_PRG.y1;49.000000;PLC_PRG.y2;24.010000;
1713803575;59575301;22-04-2024;04:32:55;PLC_PRG.y1;59.000000;PLC_PRG.y2;34.810000;
1713803575;59575504;22-04-2024;04:32:55;PLC_PRG.y1;68.000000;PLC_PRG.y2;46.240000;
1713803575;59575707;22-04-2024;04:32:55;PLC_PRG.y1;79.000000;PLC_PRG.y2;62.410000;
1713803575;59575910;22-04-2024;04:32:55;PLC_PRG.y1;86.000000;PLC_PRG.y2;73.960000;
1713803576;59576113;22-04-2024;04:32:56;PLC_PRG.y1;91.000000;PLC_PRG.y2;82.810000;
1713803576;59576317;22-04-2024;04:32:56;PLC_PRG.y1;96.000000;PLC_PRG.y2;92.160000;
1713803576;59576520;22-04-2024;04:32:56;PLC_PRG.y1;99.000000;PLC_PRG.y2;98.010000;
1713803576;59576723;22-04-2024;04:32:56;PLC_PRG.y1;100.000000;PLC_PRG.y2;100.000000;
1713803576;59576926;22-04-2024;04:32:56;PLC_PRG.y1;100.000000;PLC_PRG.y2;100.000000;
1713803577;59577129;22-04-2024;04:32:57;PLC_PRG.y1;99.000000;PLC_PRG.y2;98.010000;
1713803577;59577332;22-04-2024;04:32:57;PLC_PRG.y1;94.000000;PLC_PRG.y2;88.360000;
```

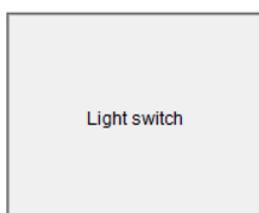
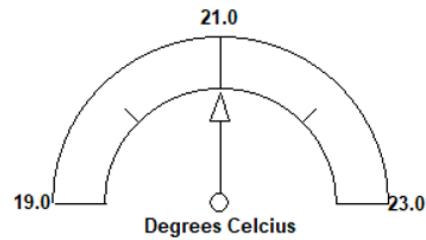
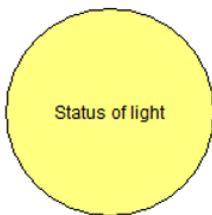
## Task 3

### Part 1

I used a Boolean variable "c" with a contact to control the variable with the virtual button.



Status of heater	
Turn heater on	
ON	OFF



Status of heater	
Turn heater on	
ON	OFF

