

4635 / 5635 - Temperature Control Lab

Updated: 19MAR2008

Write a program that turns on a lamp (heat source) when the temperature drops below 30 degrees Celsius (as detected by the thermostat).

Provide the user with menu options, e.g.

```
*** Dr. T's Amazing Temperature Controller ***

From the below menu, select an option:

A - Automatic (set automatic thermostat control)

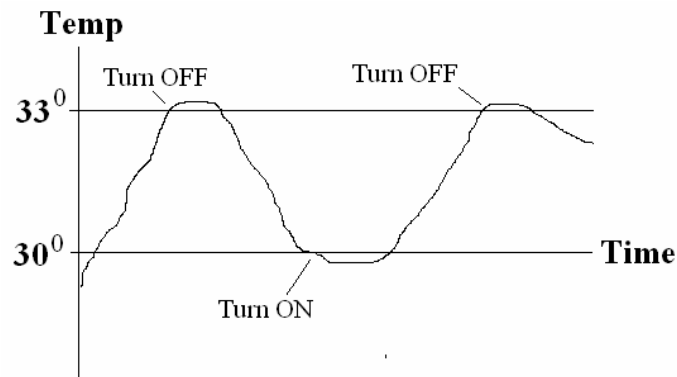
N - Manually turn lamp ON

F - Manually turn lamp OFF

Q - Quit the program

Current Lamp Status: OFF
```

To reduce rapid ON/OFF oscillations of the lamp state near 30°C, you must use two “set points”. Turn off the lamp if $T < 30^{\circ}\text{C}$ and turn it on if $T > 33^{\circ}\text{C}$ (so you have a 3°C “dead band”).



Think about how to implement this program and start on your user interface. We will discuss the necessary circuitry in lab on Thursday.