Module: Internet of Things **2019**

Lab Session 5: A Simple Alarm

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5.1 Introduction

The goal of this session is to develop a simple temperature detector and alarm. This detector is able to take the measurement of the temperature regularly.

You need to implement an alarm mechanism which will be activated if the temperature exceeds a threshold, e.g. 28°C.

If a sensor measurement exceeds the temperature threshold, the LED light will be activated and a text "Alarm!" will be printed on the screen.

5.2 Exercise

You can modify the code from previous week to implement the sensor measurement code.

You must include the following header file to use the functions to control LEDs.

```
#include "dev/leds.h"
```

There are several useful functions defined in the header file for controlling the LEDs:

```
unsigned char leds_get(void);
void leds_on(unsigned char leds);
void leds_off(unsigned char leds);
void leds_toggle(unsigned char leds);
void leds_invert(unsigned char leds);
```

To control all LEDs, you may use the following functions:

```
leds_on(LEDS_ALL);
```

and

```
leds_off(LEDS_ALL);
```