

The sensor for which the code is written, is the DHT11 Temperature & Humidity Sensor.

A) Collecting the sensor's temperature value every 2 seconds, this period must be defined by using a timer.

B) By using an Interrupt Service Routine, it will print on the screen the sensor's temperature value and sampling rate.

C) If the temperature is greater than 25°C, an ISR (Interrupt Service Routine) will be called that will change the color of the LED to red.

D) If the temperature is lower than 20°C, an ISR (Interrupt Service Routine) will be called which will change the color of the LED to blue.

E) If the temperature is between 20°C and 25°C, an ISR (Interrupt Service Routine) will be called that will change the color of the LED to green.

F) If the user's button is pushed, an ISR (Interrupt Service Routine) will be called, which will change the sampling rate of printing the sensor's temperature value on the screen:

- i) The first time that the user's button is pushed, the sampling rate of printing the temperature value on the screen must change in relation to the sum of the last two digits of your special registry number (AEM). For example, if your AEM is 10153, the new period should be 8 seconds. If the summation of the last two digits surpasses 10, set the period to 4 seconds.
- ii) For every next push, our program should check if the number of times that the user's button is being pushed is an odd number, in which case we set the period to 3 seconds, or if it is an even number, in which case we set the period to 4 seconds.