Micro controller based refrigeration control system

The main purpose of the project is to monitor and control the Refrigerator temperature by using a temperature sensor. This sensor monitors the temperature of the refrigerator for every few minutes; if the temperature of the refrigerator decreases the limit then it automatically turns OFF the device.

Temperature Monitoring systems are in huge requirement and we definitely can find their advantages in many industrial sector and also in residential sector. We can find many kind of temperature monitoring systems for different uses but the major challenge is to design a very simple, User-friendly and cost effective system.

We developed this project, which is relatively inexpensive to sense the temperature. The temperature is read by the ADC (Analog to Digital Converter) module of the microcontroller Unit. This ADC data is processed and converted into the actual temperature reading by the microcontroller. This processed data is sent to the LCD for user display.

The door-opening sensor is also interfaced with the controller when the door of the refrigerator is opened then it senses and it gives a buzzer alert.

The objectives of the project include:

1. Read the temperature in real-time.
2. A buzzer for alerts.
3. LCD display.

The project provides us exposure on:

1. Initialization of ADC module of microcontroller.
2. Interfacing Temperature sensor to controller.
3. LCD interfacing.
4. Embedded C program.
5. PCB designing.

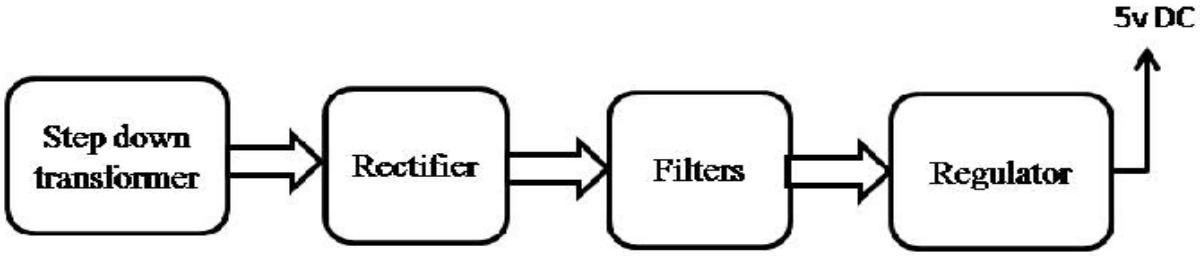
The major building blocks of this project are:

1. Regulated power supply with voltage regulator.
2. Temperature sensor.
3. ADC module.
4. Microcontroller.
5. Door opening sensor.
6. LCD display
7. Buzzer.

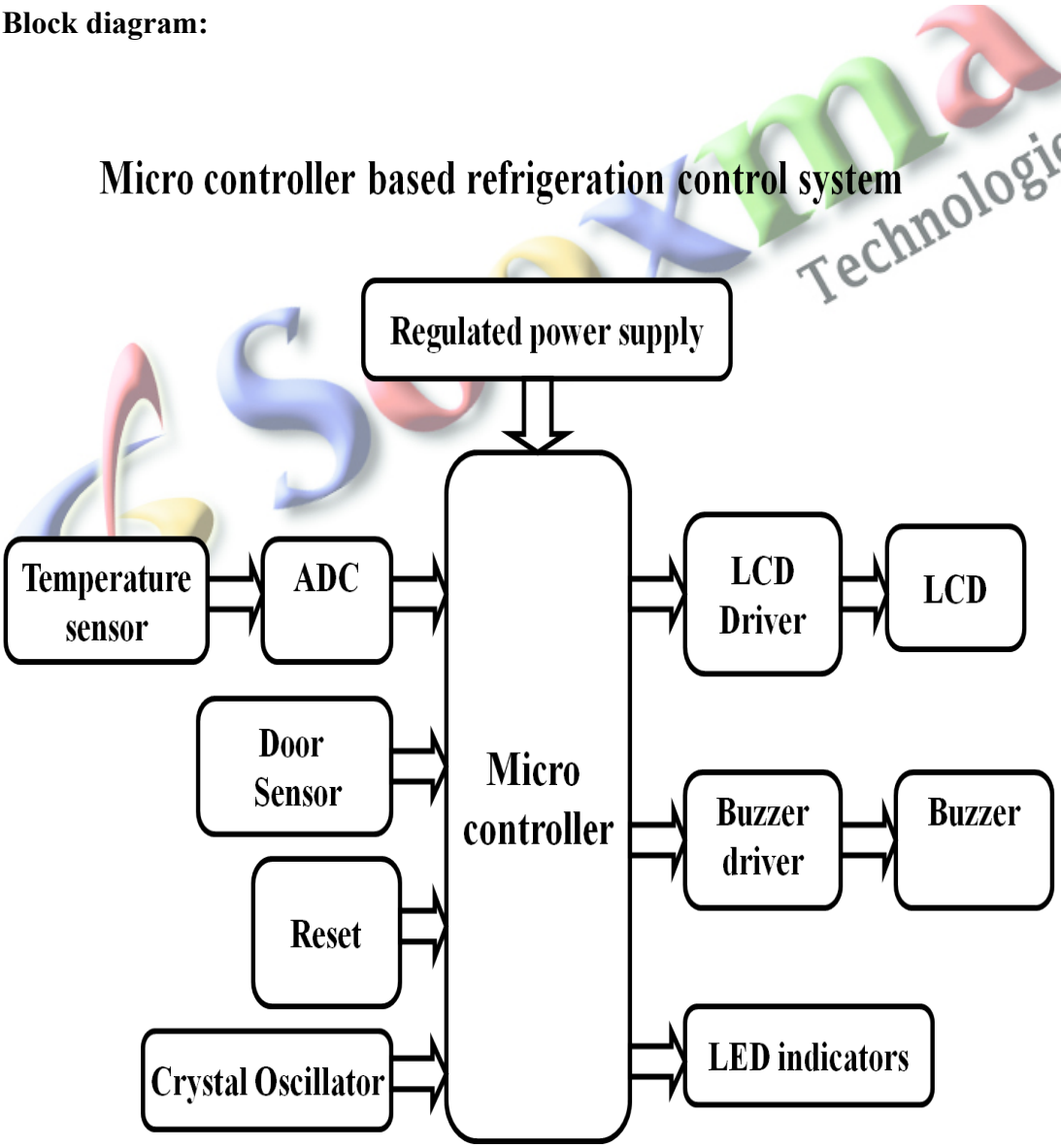
Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Microcontroller.

Regulated Power Supply:



Block diagram:

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