

# BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY

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## WEATHER WIZARD

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Weather Wizard youtube link [Click Here](#)

## 1 Features Implemented

- PIR motion sensor interfaced
- Digital light sensor interfaced
- DHT11 humidity sensor interfaced
- LM35 temperature sensor interfaced
- FC-37 rain sensor interfaced
- 16X2 character LCD interfaced

## 2 Features did not implement

- We did not interface the HC-05 bluetooth module as we proposed

## 3 Basic description of the Project

- LM35 can measure the temperature of the room
- PIR motion sensor can detect any motion in front of it
- Digital light sensor can detect light in the room
- FC-37 rain sensor can detect rain outside of the room
- DHT11 humidity sensor can measure the humidity inside the room
- After measuring all the environment variables the system will suggest a song

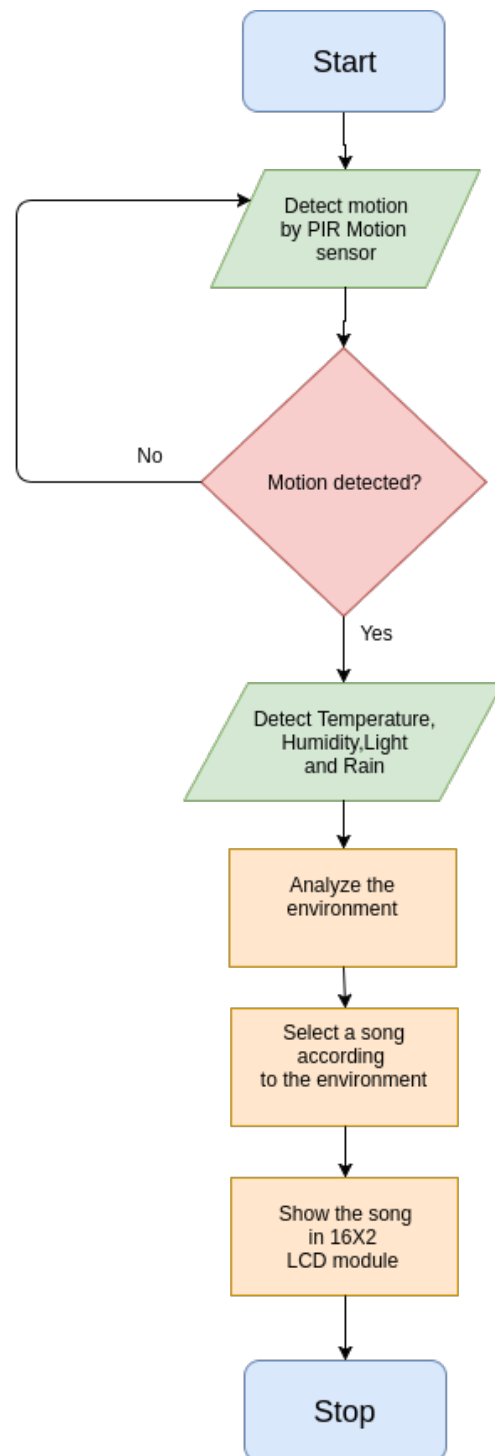


Fig : Flow chart

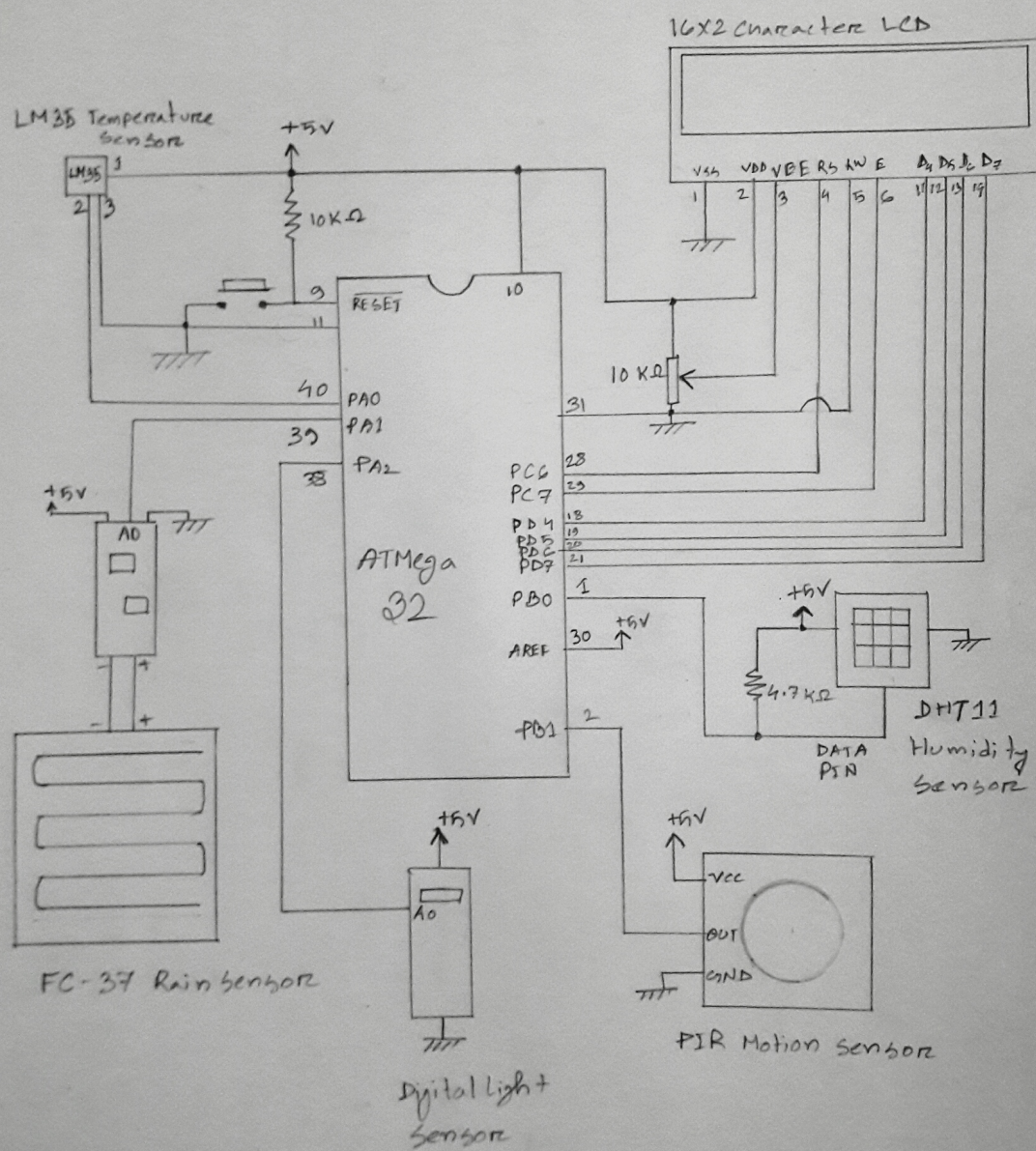


Fig: Circuit Diagram.

## 4 Interfacing of sensors

### 4.1 Interfacing of LM35 temperature sensor

We interfaced LM35 with our ATmega32 microcontroller via ADC port 0 (PIN A0). The sensor gave the output in analog. Then we converted the analog signal to digital signal and read the value. For this conversion we used a header "adc.h". The header is included with our code folder.

### 4.2 Interfacing of PIR motion sensor

We interfaced the PIR motion sensor with our microcontroller via PIN B1. The sensor gave digital output. When a movement is detected in front it gives a voltage as output. We read that voltage and detected any object moving in front of it.

### 4.3 Interfacing of DHT11 humidity sensor

We interfaced the DHT11 humidity sensor with our microcontroller via PIN B0. The sensor gave digital output via serial outputs. We read the outputs via serial communication.

### 4.4 Interfacing of FC-37 rain sensor

We interfaced FC-37 rain sensor with our ATmega32 microcontroller via ADC port 1 (PIN A1). The sensor gave the output in analog. Then we converted the analog signal to digital signal and read the value. For this conversion we used a header "adc.h". The header is included with our code folder.

### 4.5 Interfacing of Digital light sensor

We interfaced Digital light sensor with our ATmega32 microcontroller via ADC port 2 (PIN A2). The sensor gave the output in analog. Then we converted the analog signal to digital signal and read the value. For this conversion we used a header "adc.h". The header is included with our code folder.

## 5 Problems and Cautions

- We faced some problems while interfacing the HC-05 bluetooth module. It took so much time but we could not implement. Then we decided to show our suggestion off songs in the LCD module. At last we interfaced the LCD module with our microcontroller and show our suggestion of song.