**Measure frequency of a BEAM**

To do the project the required materials are

* ADXL335
* Arduino Uno
* Breadboard
* 3 LED
* Required amount of wire
* ESP8266

The connections are elaborated in the pdf file called ADXL335.pdf Again the connection are explain here again.

|  |  |
| --- | --- |
| ADXL 335 | ARDUINO UNO |
|  | AREF to VCC |
| VCC | 3.3 V VCC |
| GND | GND |
| X\_OUT | A0 // this port remain unplug |
| Y\_OUT | A1 // this port remain unplug |
| Z\_OUT | A2 // this is the only plugged as the acceleration is measured only z axis |
| LED 1,2,3 GND | GND. //Each LED has 2 leg. Typically log leg is positive and short leg is negative. Connect the short leg of the 3 LED to the GND |
| LED 1,2,3 | 8,9,10 port no of ARDUINO// Connect the log leg of the 3 LED in VCC |

**Note: For ADXL335 the ADUINO UNO AREF must be connected to VCC as ADXL335 is analog sensor. All of the sensor should connect to 3.3 V of the ARDUINO UNO**

In the coding the acceleration value is converted to frequency by FFT command.

A file named “Frequency connection.fzz” shows the connection, to run this program download “fritzing” and it is a free software. But the ADXL335 pdf also shows the connections.

Later on Wifi connection is trying to obtain. It is concluded that the Wifi connection is possible but it may needs better sensor. The test is done by ESP8266, the problem is, it sometimes drop the connection.

The following link is useful tutorial for wifi connection.

<http://cgrant.io/tutorials/make/esp8266_wifi_module_arduino_uno_thingspeak/>

Moreover there is an attached zip file called “project\_ahmed” that includes full setup of the wifi connection but the problem is, it is done in Linux system. But if anyone expert in PHP, he/she can easily modify it.

The recommendation for wifi connection is to use better wifi sensor for example EXP8266 ARDUINO. ESP8266 ARDUINO is also tested and it gives good result.

The project is done by Ahmed Yusuf under the supervision of Juha Kilkki. For further information send email to [ahmedyusuf91@gmail.com](mailto:ahmedyusuf91@gmail.com) or contact with my teacher Juha Kilkki.