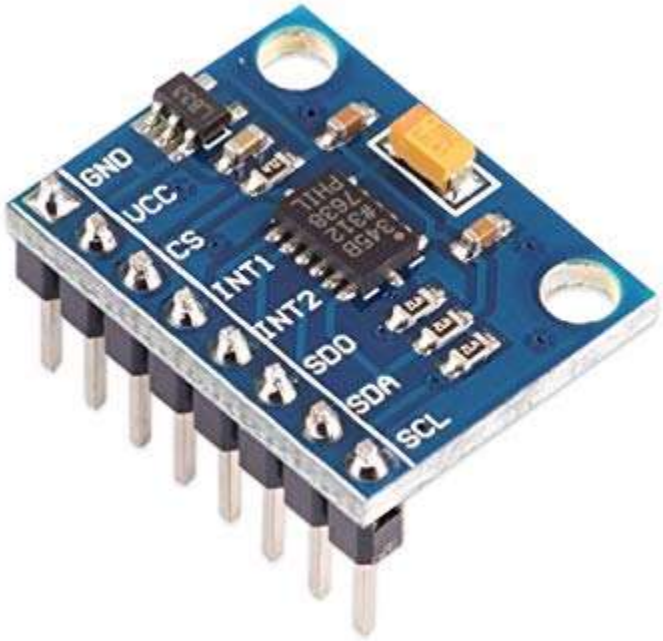
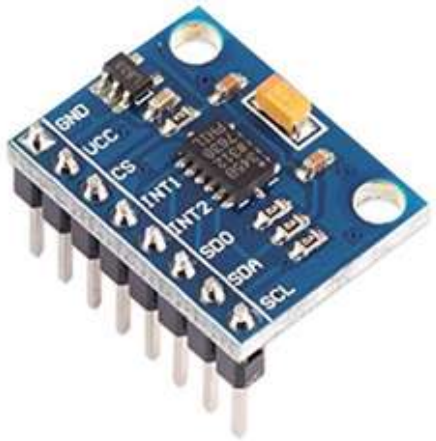
Interfacing of ADXL345 Accelerometer



Accelerometer(ADXL345)

- The ADXL345 is a small, thin, ultralow power, 3-axis accelerometer with high resolution (13-bit) measurement at up to ±16 g.
- Digital output data is formatted as 16-bit two's complement and is accessible through either a SPI (3- or 4-wire) or I2C digital interface.
- The ADXL345 is well suited for mobile device applications. It measures the static acceleration of gravity in tilt-sensing applications, as well as dynamic acceleration resulting from motion or shock.



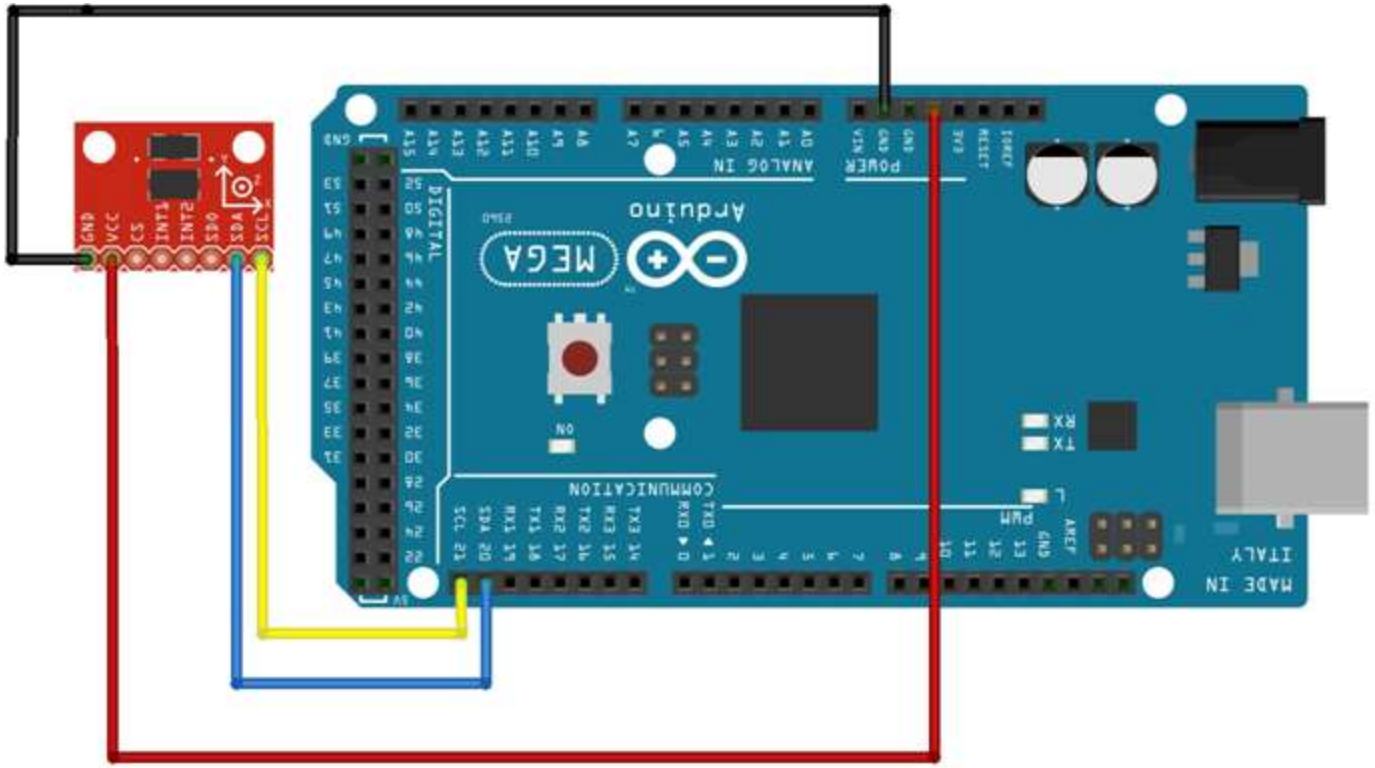
Working of Accelerometer

- This is a 3-axis accelerometer which can measure both static and dynamic forces of acceleration.
- The unit of measurement for acceleration is meter per second squared (m/s^2). However, accelerometer sensors usually express the measurements in “g” or gravity. One “g” is the value of the earth gravitational force which is equal to 9.8 meters per second squared.
- So, if we have an accelerometer positioned flat, with its Z-axis pointing upwards, opposite to the gravitational force, the Z-axis output of the sensor will be 1g. On the other hand, the X and Y outputs will be zero, because the gravitational force is perpendicular to these axes and doesn’t affect them at all.

Components required

- Arduino mega
- ADXL345 Accelerometer
- Jumper wires

Connection Diagram



Connections

1. Connect SDA pin of ADXL345 with 20 pin of Arduino.
2. Connect SCL pin of ADXL345 with 21 pin of Arduino.
3. Connect its Vcc with Arduino (+5V).
4. Connect its GND with Arduino GND.

Project Link : https://youtu.be/TLrNSPZuTJM