

## **MEMS BASED MOUSE CURSOR CONTROL**

### **AIM:**

Design and Development of MEMS based mouse cursor control.

### **PURPOSE:**

The project is aimed to design a “Wireless mouse with MEMS accelerometer” using which the movements of the mouse can be controlled wirelessly by using MEMS accelerometer. Generally, Computer operation done by manually. To do any kind of operation on computer, we need to operate mouse and keyboard. Here we want to implement a system that can operate mouse functions through electronically. With the combination of Arduino, MEMS and C# application we can implement this system. This project title is MEMS based mouse cursor control using Arduino.

### **DESCRIPTION:**

Arduino connected to MEMS sensor (Accelerometer-ADX1345/335) through I2C port. Two buttons connected to Arduino digital pins. Max232 connected to Arduino UART port that can communicate with C# application.

### **WORKING:**

MEMS sensor can detect hand motions when MEMS sensor place on hand. It can detect front, back, left and right moments. Arduino takes this data and send through serial port to PC or laptop. C# application handles this data and moves the cursor position according to hand gestures or moments. Two buttons for left click and right click of mouse. The MEMS moment information will be displayed on 16x2 LCD display.

## **TECHNICAL SPECIFICATIONS:**

### **HARDWARE:**

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
MEMS – Accelerometer	:	ADXL345/MPU6050
Software Application	:	C# application
Power Source	:	12v 1 amp Adaptor

### **SOFTWARE:**

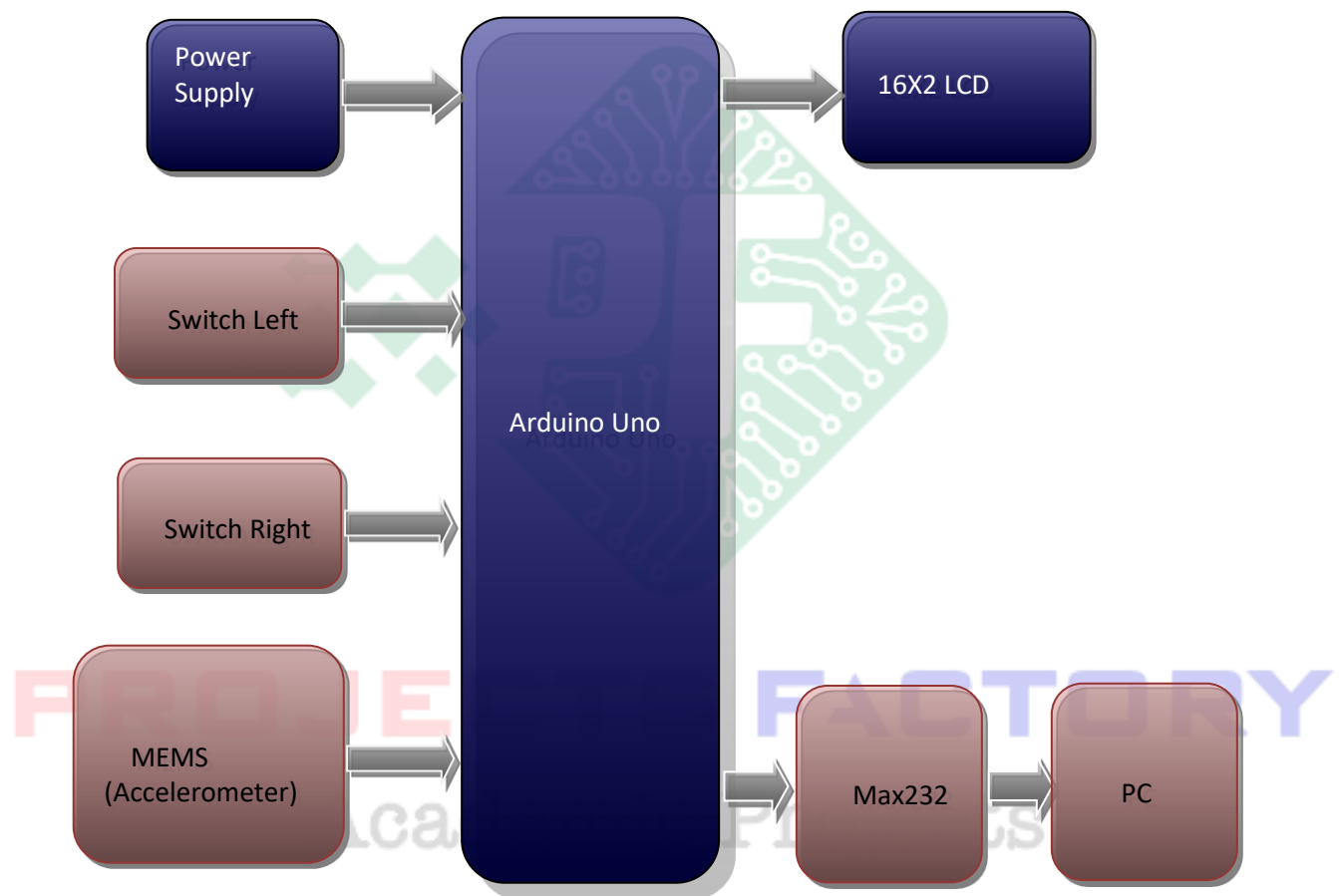
Arduino IDE  
Proteus based circuit diagram

### **APPLICATIONS:**

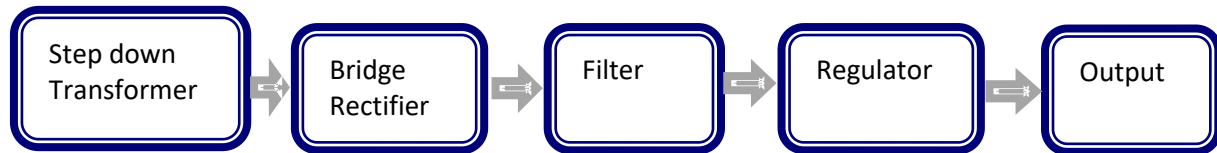
- Mouse control Applications
- Computer operation Applications
- Robotics

**PROJECTS FACTORY**  
Academic Projects

## BLOCK DIAGRAM:



## POWER SUPPLY BLOCKDIAGRAM:



## INTERFACES COVERED:

- We have covered MEMS sensor interface
- Arduino and C# interface

**PROJECTS FACTORY**  
Academic Projects