PICK AND PLACE ROBOTIC HAND

AIM:

Design and Development of Pick and Place Robotic Hand.

PURPOSE:

Robotic applications are used in everywhere. Especially in manufacturing industry, robotics plays major roll and cost effective. Comparing with manual work, robots do fast and accurate. Also day and night work possible with robotics. For humans there are some limitations and can't do work throughout the day. There is some fully automated robotics, working in manufacturing industry. But we proposed Pick and place robotic hand that can controlled manually with MEMS motions. Project title is pick and place robotic hand with Arduino controller.

DESCRIPTION:

MEMS (Adxl335/345 - Accelerometer) connected with Arduino through I2C port. Two L293ds (H-bridge ics) connected to Arduino digital pins. L293d can drive motors in clock and anti-clock directions. Two buttons connected to Arduino digital pins.

WORKING:

We can control pick and place mechanism with the help of MEMS sensor. By tilting MEMS sensor up, down, left and right - Robotic ARM will pick and place objects. By pressing two buttons the entire robotic hand will turn clock wise and anti-clock wise. Robotic hand motions will be displayed on 16x2 LCD display.

TECHNICAL SPECIFICATIONS:

HARDWARE:

Microcontroller	:	Arduino Uno
Crystal	:	16 MHz
LCD	:	16X2 LCD
Motors	:	10 rpm and 3.5rpm
Motor Driver	:	L293D
MEMS sensor	:	ADXL335/345 – Accelerometer
Power Source	:	12v 1 amp Battery

SOFTWARE:

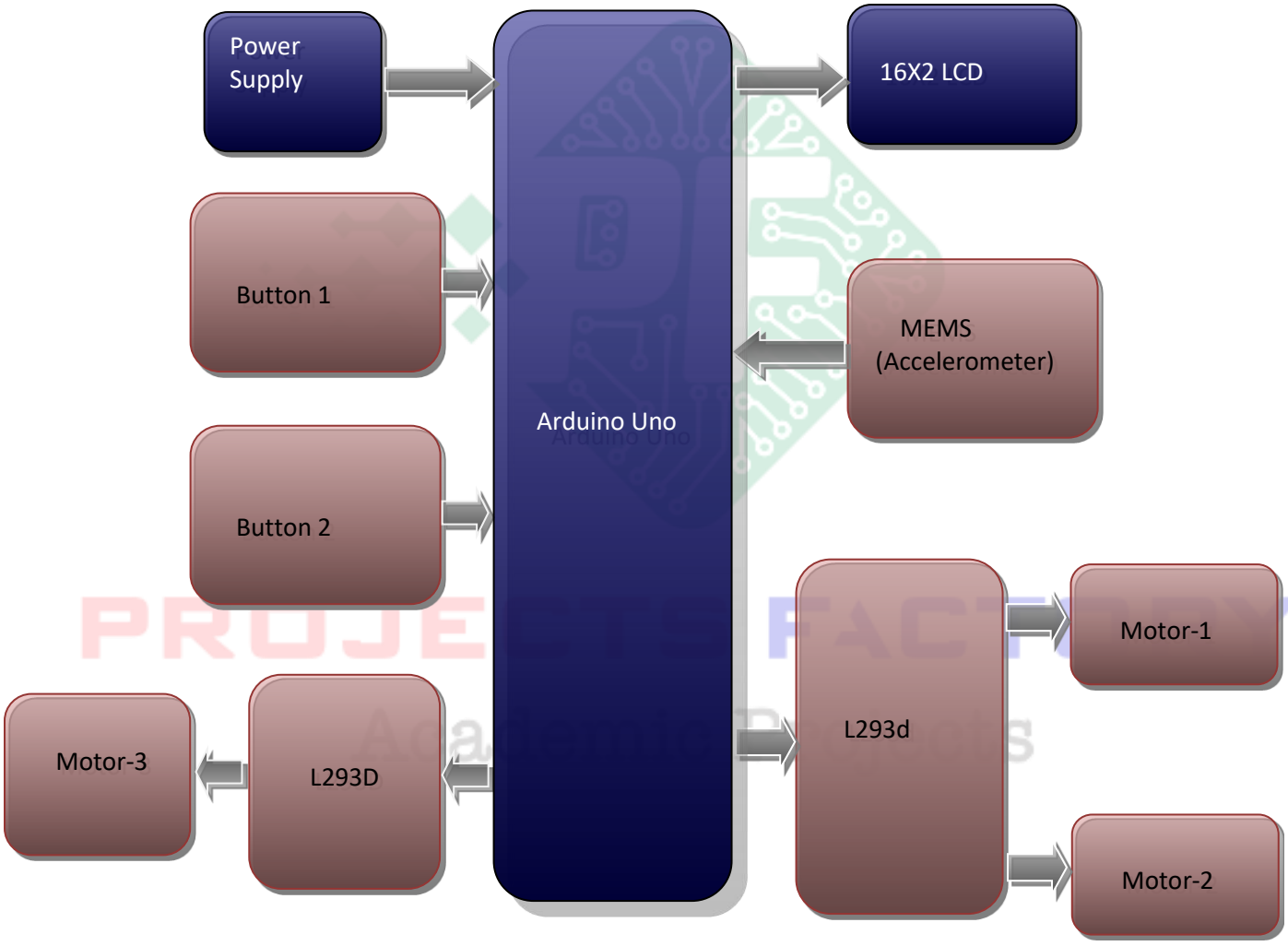
Arduino IDE

Proteus based circuit diagram

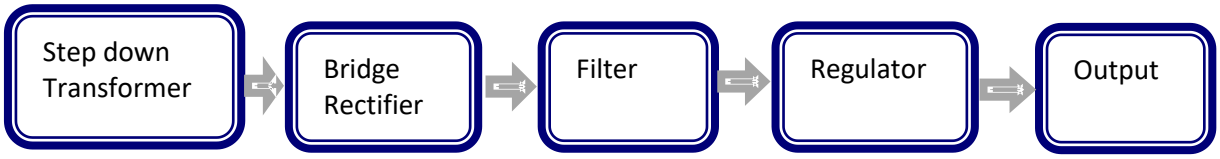
APPLICATIONS:

- Robotic Applications
- Pick and Place Applications

BLOCK DIAGRAM:



POWER SUPPLY BLOCKDIAGRAM:



INTERFACES COVERD:

- We have covered Bluetooth (HC-05) interfacing
- MEMS sensor interface
- Pick and place robotic Mechanism