Wrist Controlled Robot

Introduction to Microcontroller

This session would deal with the basics of Microcontroller. The focus will be on the AVR series micro controller- ATMega8, which is one of the most powerful and widely used 8 bit micro controller.

- What is Microcontroller?
- Difference between Microcontroller and Microprocessor
- Microcontroller Architecture and Interfacing
- How can we use Microcontroller in our Own Circuits?

Introduction to Controlling Circuit

- Introduction to Motor
- Types of Motors
- Difference between DC motor and DC geared motor
- Motor Controlling IC (L293D)

Introduction to Programming Languages

- Programming Languages- Assembly vs Embedded C.
- Microcontroller Programming using 'Embedded C'.

Installation of Software and Debugging

- Writing your First 'Embedded C' Program in AVR Studio
- Program Compilation and Debugging
- Loading Compiled 'C' Program into Microcontroller using Robosapiens 'AVR BOOTFlasher v1.0 Beta'

Assembling the DIY kit of Robosapiens Board

Assembling plays a major role that deals with the mechanical section of Robotics including mounting of components and mechanical stability.

Generating different LED Patterns using Robosapiens Board

Display Device

- Types of Display Devices
- 2x16 Characters LCD Display
- Pin out of LCD Display
- Interfacing of LCD with Atmega8

Generating different LED Patterns using Robosapiens iBOT Mini V3.0

Introduction to ADC (Analog to Digital Converter)

- What is ADC
- Use of ADC
- How it works
- Different mode and registers of ADC
- Programming ADC

Introduction to Accelerometer

- What is Accelerometer
- Types of Accelerometer
- Difference between Accelerometer and Gyro Sensor
- Application of Accelerometer
- Programming of Accelerometer
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    - Making of Wrist Controlled Robot