Msys-Biometric Workshop Module

By
ABLab Solutions
www.ablab.in
www.facebok.com/ablab.in

Table of Contents

Workshop Overview

Msys-Biometric is an Embedded System workshop where you will learn about designing a Biometric Finger Print Sensor based Secured Voting Machine. The Workshop begins with a brief overview on embedded system to help you recall the fundamentals and attain conceptualization about the stepping tools of embedded system and ends with designing of Biometric Finger Print sensor based secured Voting Machine. It includes a detailed study structure, delivered & demonstrated live by our experts on "How to build a Biometric Finger Print Sensor based secured Voting Machine".

Our main aim is to effectively impart the basic know-how of designing Biometric Finger Print Sensor based Secured Voting Machine.

We at ABLab Solutions would get you closer to the advanced embedded system domain right from the fundamentals to its implementation in making Biometric Finger Print Sensor based Secured Voting Machine.

Learning Outcomes

- How to use different Embedded software tools
- How to write program for ATmega16
- How to interface LED with AT mega 16
- How to generate different patterns in LED array
- How to communicate using USART protocol
- How to interface Biometric Finger Print sensor with ATmega16
- How to design a Biometric Finger Print Sensor based Secured Voting Machine

Program Benefits

- Clear your fundamentals of Embedded System
- Build & develop Biometric Finger Print Sensor based Secured Voting Machine
- Gain conceptual knowledge on Embedded System, Embedded C, ATmega16, USART Communication, Alphanumeric LCD, Biometric Finger Print Sensor, etc.
- Get trained by experts
- Awarded certificate on "Msys-Biometric"
- Live Demos and Interactive Question & Answer sessions

- Get useful Materials

Course Outline

- Introduction to Embedded System
- Application of Embedded System
- Overview of Basic Electronics
- Overview of Digital electronics
- AVR Software Tools-AVR Studio 4, WinAVR, SinaProg
- Introduction to ATmega16
- Features of ATmega16
- I/O Ports of ATmega16
- LED Interfacing with ATmega16
- Different LED Pattern Generation
- 4X4 Keypad
- 4x4 Keypad Interfacing with ATmega16 and LCD Display
- 16X2 Alphanumeric LCD
- 16X2 Alphanumeric LCD Interfacing with ATmega16
- Horizontal Scrolling in 16X2 Alphanumeric LCD with ATmega16
- Vertical Scrolling in 16X2 Alphanumeric LCD with ATmega16
- USART
- USART of ATmega16
- Biometric Technology
- Biometric Finger Print Technology
- R305 Biometric Finger Print sensor
- R305 Biometric Finger Print Sensor Interfacing with ATmega16
- R305 Biometric Finger Print Sensor based Voting Machine with ATmega16

Practicals

- LED Interfacing with ATmega16
- LED Blinking with ATmega16
- LED Pattern 1 with ATmega16
- LED Pattern 2 with ATmega16

- LED Pattern 3 with ATmega16
- LED Pattern 4 with ATmega16
- LED Pattern 5 with ATmega16
- LED Pattern 6 with ATmega16
- LED Pattern 7 with ATmega16
- LED Pattern 8 with ATmega16
- LED Dancing with ATmega16
- 4x4 Keypad Interfacing with ATmega16 and LCD Display
- 16X2 Alphanumeric LCD Interfacing with ATmega16
- Horizontal Scrolling in 16X2 Alphanumeric LCD with ATmega16
- Vertical Scrolling in 16X2 Alphanumeric LCD with ATmega16
- R305 Biometric Finger Print Sensor Interfacing with ATmega16
- R305 Biometric Finger Print Sensor based Voting Machine with ATmega16

Kits Detail

- AVR Trainer Board-100 - 1pc
- AVR USB Programmer - 1pc
- R305 Biometric Finger Print Sensor - 1pcs
- 16X2 Alphanumeric LCD - 1pc
- 4X4 Keypad - 1pc
- 12V,1A Adapter - 1pc
- Required Connectors

Materials

Sample Codes & Project PDFs

- LED Interfacing with ATmega16
- LED Blinking with ATmega16
- LED Pattern 1 with ATmega16
- LED Pattern 2 with ATmega16
- LED Pattern 3 with ATmega16
- LED Pattern 4 with ATmega16

- LED Pattern 5 with ATmega16
- LED Pattern 6 with ATmega16
- LED Pattern 7 with ATmega16
- LED Pattern 8 with ATmega16
- LED Dancing with ATmega16
- Buzzer Interfacing with ATmega16
- 4x4 Keypad Interfacing with ATmega16 and LED Display
- 4x4 Keypad Interfacing with ATmega16 and LCD Display
- 4X4 Keypad based Password with ATmega16 and LED Display
- 4X4 Keypad based Password with ATmega16 and LCD Display
- 16X2 alphanumeric LCD Interfacing with ATmega16
- Horizontal Scrolling in 16X2 Alphanumeric LCD with ATmega16
- Vertical Scrolling in 16X2 Alphanumeric LCD with ATmega16
- ATmega16 to PC Communication with LED Display
- PC to ATmega16 Communication with LED Display
- Full Duplex Communication between PC and ATmega16 with LED Display
- ATmega16 to PC Communication with LCD Display
- PC to ATmega16 Communication with LCD Display
- Full Duplex Communication between PC and ATmega16 with LCD Display
- R305 Biometric Finger Print Sensor Interfacing with ATmega16
- R305 Biometric Finger Print Sensor based Voting Machine with ATmega16

Softwares, Installation Guides, User Guides

- AVR Studio 4
- WinAVR 2010
- SinaProg
- USBasp driver(for Window XP, Vista, 7 & 8)

Header Files

- USART
- LCD
- KEYPAD

- R305

Datasheet

- ATmega16
- R305 Finger Print Sensor
- JHD162A

User Manuals

- AVR Trainer Board-100 User Manual
- AVR USB Programmer User Manual
- R305 Biometric Finger Print Sensor User Manual

Course Duration

The duration of the workshop will be of 16 hours (2 days) which includes both theory and practical sessions.

For any query, Please Contact

ABLab Solutions
1st Floor, A/321, Saheed Nagar
Near Railway Crossing, Bhubaneswar
Odisha-751007, India
Info@ablab.in
www.ablab.in
M-8984089851