REPORT

ON

A TWO DAY WORKSHOP ON

"EMBEDDED SYSTEM DESIGN AND DEVELOPMENT TOOLS"

Organized by

Embedded System & Sensor Networks Research Group

&

Department of Electronics & Computer Engineering

In Association With

IEEE-Student Branch   and CSI-Koneru Chapter

Date: 26th & 27th Dec,2014   **Venue**: Jasmine Hall and Embedded System LAB

The Embedded System & Sensor Networks Research Group and Department of Electronics & Computer Engineering of K L University organized a two day workshop on "Embedded System Design and Development Tools" on 26th and 27th Dec,2014. This workshop was organized in association with IEEE KLUSB and CSI-Koneru Chapter. The convenor of the workshop is Prof. N. Venkatram, Head (Department of ECM).

Picture 1: Participants and faculty immersed in the workshop

Mr. Y. Seshananda Reddy from Sunshinelektrik was the resource person for the workshop. Mr. Y. Seshananda Reddy has over five years experience on Embedded System Training. Mr. Reddy has the experience of conducting various workshops in various colleges.

The students of B.Tech/M.Tech- ECM, ECE, EEE, CSE attended the workshop.

Day 1 (26th Dec, 2014)

The first day of the workshop started at 10:00 a.m. with a brief speech by Prof N.Venkatram HOD-ECM and Dr. K. Sreenivas Ravi, Head of Embedded System & Sensor Networks Research Group.

Mr. Seshananda Reddy started the session at 10:30 a.m. with the Introduction of Embedded System, its types and its applications. The morning session also covered the following topics

- Basics of 8051 microcontroller.
- Basics of PIC microcontroller.
- Basics of ARM Processor
- Programming in Embedded-C
- Application development in proteus using different controllers and Processors

The morning session resumed after lunch at 2:30 p.m. The afternoon session of the workshop focused on the hands on experience to be given to the participants. The afternoon session was conducted in the Embedded System Lab of Computer Block. All the participants worked on the tools (Keil and Proteus). The participants practised the program to display numerical digits on 7 segment device interfaced with 8051 microcontroller using the tools. After a ten minutes break, the session ended after the detailing the pin diagram of LCD Interfacing.

Picture 2: Mr. Seshananda Reddy addressing the gathering and Practical implementation in LAB

Picture 3: Practical implementation in LAB

Day 2 (27th Dec,2014)

The morning session of second day of workshop was the theory explanation of LCD Interfacing, DC Motors and designing simple robot. The resource person explained the LCD command codes and their description. The types of LCDs , its pin diagram and working description was also explained. The step by step explanation on how to write a program to interface and display characters on 16x2 LCD using 8051 was given. The different type of Motors and their difference was briefly explained. To interface a motor with a microcontroller, a driver IC is required. The operation and pin diagram of the driver control was explained to enable us to interface it with a micro controller. The participants were guided on how to write a program to control DC motors to move in clockwise and anti clockwise direction. Also, a simple program to control a simple robot to move in different directions was explained.

After a small break, the session resumed with a new topic, "PIC microcontrollers". The detailed information about the history and evolution of PIC, its nature, and the family of PIC was given. The IDE of PIC of Microchips i.e. MPLab IDE was introduced. The pin diagram and architecture of PIC 18F4550 was explained in the end of morning session.

The afternoon session was again a hands on experience on the IDEs, Keil and Proteus. The participants practised interfacing LCD and motors to 8051 microcontroller. An exercise was given to the participants to display a scrolling of their names. The last one hour of the end session was a brief description of ARM processor and comparison with other controllers.

In-charge's-PSA   HOD-ECM

Dr M.Suman   Prof N.Venkatram

M.Venkateswara Rao