

2010

THINKWARE-

“TECHNOLOGY & INNOVATION KIOSK”

www.thinnkware.com

“This is Computer age next will be Robotic era”

WORKSHOP ON ELECTRONICS & SENSORS “X-SENSOTRONICS”

ThinkWare conceptualizes their own unique course in Sensor designing & use of basic electronic in this with self developed modules & AVRboard based kits for Engineering students.

Think Ware, venture of KC Robotics & Embedded Pvt. Ltd.
www.thinnkware.com

ThinnkWare: Technology & Innovation Kiosk

Shepherding-Intelligent-Tomorrow

M/s ThinnkWare is a venture which deals in the domain of Robotics, Embedded Systems & MATLAB with strategically current focus in educational domain to bridge the gap between Industry demands & current academics offerings in Institutes. With a passion in Robotics and keeping constant eye on various national & international events, we have vast experience in the same and a constant focus in this grooming industry. **ThinnkWare** was founded by a strong team of young Engineers & budding Entrepreneurs working in the same industry, and is currently incubated at STEP-ITBI, JSSATE Noida. The company is properly backed by the experienced IITians and Industries.

By developing an active interest of youth in robotics and embedded systems, Thinnk Ware aims to lay a strong foundation for the technical development of our country. Thinnk Ware is a constant facilitator in the scientific and technical education of students by providing them requisite resources through wide variety of kits, software based programming tools, basic & advanced level workshops and web based learning resources.

The various products have been designed with a viewpoint of both educating and inspiring the individual not only about how robots work but about the importance of practical learning both in the academic and professional segments. Thus graduating the idea of Embedded Systems and Robotics from hobby to profession and preparing the students to be confident about pursuing a career.

ThinnkWare was conceptualized based on a market unavailability of hands-on practical training and prohibitive cost for hardware and components coupled with their unavailability. With emphasis in superiority & quality, and fueled by an strong R&D team **ThinnkWare** set up at STEP-JSSATE, Noida constantly churn out products to facilitate its goal of creating a strong & rich technical community.

ThinnkWare proposes to be a one-stop-shop for the technical educational needs of the nation with products ranging from student & professor training sessions, laboratory architecture and equipment for educational institutions. Range can be checked out at roboniche section.

We invite you to come share this dream with us propagating these fundamentals further towards the development of a strong and technically rich community. In this proposal we'll guide you through ThinnkWare specifically designed keeping the target audience in mind.

Achievements:

- Appreciated by Dr. APJ Abdul Kalam for their concept of Shepherding-Intelligent-Tomorrow.
- Awarded by Amity HR Excellence award for best team effort.
- Publicized on many magazines & Newspapers.
- Trained more than 5000 students from IITs, NITs, International Universities, Deemed Universities and various Private Institutes.

Team ThinnkWare.

X-Sensotronics

X-Sensotronics is meant for those who want to explore more than autonomous robotics to how they sense obstacle, line & external environment. We bring you a workshop on advanced sensors. This might be your opportunity to learn about some very important sensors which could give you a new perspective of electronics & its importance. The workshop will be focused on introducing you to the new kind of sensors and learning how to use them.

X-Sensotronics also provides you a chance to befriend the feature rich AVR Microcontroller. We would be exploring the different features of the AVR Microcontroller.

All these sessions will be revolving around developing applications on the advanced sensor modules & AVR platform specially designed by ThinkWare. This kit includes, microcontroller based board, programming tool, sensors etc. Hands on sessions on this kit help the participants to enhance their embedded C programming and PC hardware interfacing. By the end of this workshop, we promise to leave you with a head rush of ideas about what all you can accomplish with the things you have learnt in these 2 days.

The concepts that will be covered in the 2 dayw span are:-

- SENSORS AND ITS DESIGNING
- MICROCONTROLLERS (AVR)
- PROGRAMMING
- INTERFACING WITH SENSORS

The cost for the workshop includes

- The advanced AVR-Sensor kit (per team of 4 students)
- Training fee
- Study material
- Participation certificate

The take away kit is flexible enough to be modified for different applications. Using the creativity imagination and now, the advanced sensors, it is self sufficient to make any dream autonomous machine.

We conduct workshop on 2 consecutive days, each day 8 hours session so in total 16 hours properly divided into theory and hands on sessions. In the end we organize a small competition among the participants of the workshop so that the students get the real feel of competitive environment.

MICROCONTROLLERS

- Overview of available microcontrollers
- Introduction & Comparison of 8051 core and AVR
- Programming the AVR Microcontroller
- Using the On-Chip Analog to Digital Converter (ADC)

This session will introduce the participants to the microcontroller. 8051 will be introduced in brief and AVR will be taught exhaustively. We will explore some features offered by the AVR Microcontroller. These features will be used in our applications throughout the workshop.

PROGRAMMING

- Introduction Embedded C Programming
- Programming the AVR
- Working on WinAVR and Ponyprog

The students will be introduced to the world of Embedded C Programming. We will be working on Win AVR. Step by Step Process of coding, compiling and burning will be explained. Due attention will be given for good programming practices.

SENSORS

- Bump (Touch) Sensor
- TSOP (Distance) Sensor
- Analog Distance Sensor
- Sound Sensors.
- Temperature (heat) Sensor

In this Module students will study Basic electronic components & its use in development of various sensors. This will be developed & soldered on PCB, tested & calibrated to give the desired output. The sensors then will be interfaced with the microcontroller to make them work automatically responding to the signals.

This session will include both, introduction to simple sensors and study of advanced sensors. These are the sensors which can prove to be extremely useful in many applications, and will improve the capability of your machine dramatically. Hands on sessions will concentrate on at least one activity with the use of each sensor.

THE KIT:

During this workshop, the students will be working on our AVRboard research platform. In addition to the platform, there are five sensors mentioned above will be included. The Participants will use this kit right from assembling it to modifying it to suit the particular applications.

The kit includes the following components:

The controller board (Brain)

- Built around the AVR ATmega16 microcontroller.
- 4 switches and 4 LEDs on board.
- I/O ports for external peripherals
- 8 ADC Input Channels.

Peripherals

- AVR Serial Programmer with FRC Cable.
- RS 232 Cable
- Analog Sensor, TSOP Sensor, Bump Sensor, Temperature Sensor & Sound Sensor.
- Motor Driver Module.
- LCD
- Power Adaptor

Course Duration:

- The workshop will be of 2 days (15 hours)

Course Fees:

- The fee for the workshop is Rs. 1500/- each student (with takeaway kit*).

Features of Workshop:

- *Take away AVRboard-Sensor kits worth Rs. 3600/- will be given to each team of 4 students.
- Certificate will be given to each participant.
- Membership on Thinkware web portal for online technical discussion & open source codes.
- Study material & Thinkware CD will be given to each team.

Requirements from college:

- LCD Projector for the lecture.
- Computers to each team for programming.
- Electronics Lab having soldering stations.
- Lodging & Boarding facility for the trainer during workshop.
- Minimum participation of 40 students.

Contact Person:

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CMO

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