



Shri Guru Gobind Singhji Institute of Engineering & Technology,
Vishnupuri, Nanded – 431 606 (M.S.)
Ph.: 02462 – 229234, Fax: 02462 – 229236, www.sggs.ac.in
(An Autonomous Institute Owned by Government)

Report on
Workshop on Embedded Linux
(February 11-12, 2017)

Linux is a Unix-like computer operating system assembled under the model of free and open-source software development and distribution. Linux was originally developed for personal computers based on the Intel x86 architecture. Because of the dominance of Android on smartphones, Linux has the largest installed base of all general-purpose operating systems. Linux is also the leading operating system on servers and other big iron systems such as mainframe computers, and is used on 99.6% of the TOP500 supercomputers. Operating systems based on the Linux kernel are widely used in embedded systems such as consumer electronics. Embedded systems programming in Linux is a challenging field and if you have some programming experience with Embedded C, it becomes easier.

Program Outline:

This two day workshop aimed at enhancing programming skill required for Embedded Linux System. The contents of this workshop included:

1. Introduction to Linux and development of Linux over the years
2. Linux Kernel Introduction and compilation of Kernel
3. Writing ARM Cortex GPIO Programming
4. Writing a program for Linux Boot Process and GRUB Utility
5. Writing C program for Linux Device drivers
6. Introduction to IOT: hardware/software
7. Writing RasberyPi GPIO Programming

The workshop commenced with felicitation of Dr. Ameet Patil, Tech. Entrepreneur, Ecobillz, Mr. Sushant Dhamanekar and Mr. Swapnil Bandiwadekar, Software Engineering at Ecobillz,

Dr. Ameet Patil started with basics of Linux open source operating system. Introduction of basic Linux and development of Linux Operating and current trends in Linux operating system. After that basic of Linux Kernel, Structure of Linux Kernel. After that Session were divided two parts Electronics students have hand on basic Linux commands and hands on Kernel Development. Next Session booting process for Linux have been explain with GRUB handling utility. While in Parallel to this Mr. Sushant Dhamanekar for VLSI students hands on session on ARM programming for GPIO and temperature sensor interfacing with IOT is taken.

On Second day hands on session for device driver and introduction to IOT is taken by Dr. Ameet Patil. For Electronics Student hands on session on Raspberry Pi is taken while VLSI and Embedded Student Kernel Compilation and GRUB utility is conducted Swapnil Bandiwadekar.



Outcomes of the Workshop:

The M. Tech students and faculty members have learned basics of Linux, coding with C and Compilation of Linux Kernel IOT interfacing, ARM cortex GPIO programming and Raspberry Pi programming.

Dr. S. N. Talbar
Professor,
Department of ExTC Engg.