

FOSS Awareness Seminar

- Introduction to FOSS [Kiruthika]
- **NRCF & FOSS Elective [Hari]**
- FOSS in Practice [Bharathi]
- FOSS Activities in Your Colleges

THE NATIONAL RESOURCE CENTRE FOR FOSS(NRCF)

AU-KBC Research Centre
M.I.T. CAMPUS OF ANNA UNIVERSITY
CHROMEPET
CHENNAI-600044

A joint initiative between
Anna University Chennai and C-DAC Chennai

Funded by
The Dept. of Information Technology
Ministry of Communication and Information Technology
Govt. of India

Background

- Govt of India interested in promoting FOSS
- President favours FOSS - "In India, open-source code software will have to come and stay in a big way for the benefit of our billion people."
- Less reliance on large corporations for software needs due to high quality manpower available in the country.

Immediate applications of FOSS in country

- E-Governance applications: Funded by the govt.; large volume; Cost savings attractive
- Applications to SMEs (Small and Medium Enterprises): Largest private sector; Affordability is important; Piracy: 74%
- School Education: Interest from state govts.; Affordable

About the NRCF

Aim and Scope of NRCF

- Human Resource Development
- Localisation in Indian Languages
- Policy Formulation & Global Networking
- Entrepreneurship Development in FOSS

Human Resource Development

- FOSS as an elective subject in Engineering colleges
- Phase 1 in Tamil Nadu
- Teacher training for 100 teachers from 50 colleges.
- Elective in 6th Semester
- NRCF provides kits/packages to colleges

Technology and Tools development

- Identify and promote FOSS equivalent of current proprietary applications
- Domains of E-Governance, SMEs and School Education
- Indigenous Linux Distribution, Device Drivers, Networking and Security Solutions etc.
- Collaboration with International agencies

Localisation for Indian Languages

- Enable easy creation and access of Indian language content on the web
- Enable the community to create content relevant to our needs and context as well as access the same with ease
- Release of FOSS based Desktop related software with user interface with help documents in Indian languages

Policy Formulation and Global Networking

- Providing support to the Govt. and other agencies in policy and program formulation
- Joining global networks and participate in international events
- Annual event called the “FOSS Congress”

Entrepreneurship Development in FOSS

- Entrepreneurs needed to proliferate FOSS
- Propose and promote models that can lead to reasonable scales of business activity in this space
- Close interaction with agencies such as NASSCOM, MAIT, CII

FOSS Elective

FOSS Elective - I

- Open to 6th semester BE CSE and IT students
- Covers
 - Setting up GNU/Linux servers and workstations
 - Configuring applications and server software
 - Performing basic system administration tasks
 - Using programming tools effectively

Structure of the course

Overview of FOSS and GNU/Linux

- Definition of FOSS and GNU
- History of the Free Software Movement
- Advantages of FOSS
- FOSS trends and potentials

System Administration

- OS installation
- Shell commands
- Network configuration
- Hardware configuration
- Boot-up Process
- X-Window system configuration
- Software installation

Server setup and configuration

- Setting up
 - Email servers
 - Web servers
 - File Services
 - Proxy Services
 - Printer Services
 - Firewalls

Programming Tools

- The GNU Compiler Collection – getting acquainted with
 - The C preprocessor – `cpp`
 - The C compiler – `gcc`
 - The C++ compiler – `g++`
 - The assembler – `gas`

Programming Tools (contd)

- Understanding Build Systems
 - Make and constructing Makefiles
 - Autoconf and Autogen
 - Using autotools to generate Makefiles tailored for different programming environments

Programming Tools (contd)

- Source Code versioning and management
 - CVS
 - Managing a repository, source code revisions etc.
 - Patch
 - Diff

Programming Tools (contd)

- GLIBC library and Linkers
 - Linking against object archives and dynamic shared objects
 - Generating statically linked binaries and libraries
 - Generating dynamically linked libraries

Programming Tools (contd)

- Debugging
 - Using the GNU Debugger – gdb
 - Graphical debuggers like DDD
 - Memory debugging profiling libraries – mpatrol, valgrind etc

Programming Tools (contd)

- Common programming practices
- Automation using bash, sed & awk

Application Programming

- The X-Window System
 - X-Window System's Client/Server architecture
 - Concepts for programming the X-Window System

Application Programming (contd)

- GUI Toolkits
 - GTK programming basics
 - Qt programming basics
- Python Programming basics

Application Programming (contd)

- Internationalisation and Localisation
 - Basics
 - I18n and L10n of existing applications
 - Writing new programs with I18n and L10n support

Books and References

- Main textbook will be provided by the NRCF
- Running Linux, Fourth Edition, Welsh, Dalheimer, Dawson, and Kaufman
- Linux Cookbook, First Edition, Carla Schroder,
- Many on-line resources

FOSS Congress

FOSS Congress

- An annual event to showcase the Indian scene in FOSS
- 3 days in the 1st half of December
- Exhibitions, Paper presentation etc.
- Participation from your colleges

What next ?

- For Final years: limited project guidance
- For 3rd years: talk to your department
- FOSS Club

FOSS Club

- Invited Lectures
- Support on your projects
- Suggest activities
- Interested in starting one ?
 - email info.nrcf@au-kbc.org

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