



A Report on Workshop titled “UNIX Essential: Hands on Training”
Organized by Department of Computer Applications
on 03.10.2026



Report Submitted by: Dr. J. Jude Moses Anto Devakanth, Assistant professor, Department of Computer Applications.

Resource Persons Details: Mr. G. R. Hemanth Kumar, Assistant Professor, Department of Computer Applications.

Time: 09:30am to 1:00pm

Venue: KKB lab

Target Participants: MCA 1st year Students (R26 Batch)

Number of Participants: 68

Mode of Conduct: Offline

Report Received on 06.10.2026

Introduction

The Department of Computer Applications organized a hands-on workshop titled “UNIX Essentials: Hands-on Workshop” to provide students with practical exposure to the UNIX operating system, shell environment, file management, permissions, and basic shell programming.

The workshop was designed to bridge the gap between theoretical concepts covered in the Operating Systems course and their practical implementation in a UNIX-like environment. The session provided students with an opportunity to work directly with the command-line interface and execute various UNIX commands and shell programs.

Objectives of the Workshop

The major objectives of the workshop were:

- To introduce students to the UNIX operating system and its working environment.
- To familiarize students with the UNIX command-line interface.
- To demonstrate basic file and directory management commands.
- To provide practical knowledge of UNIX file permissions.
- To introduce students to shell scripting and Bash commands.
- To develop students' ability to execute and troubleshoot basic shell programs.
- To provide hands-on experience with commonly used UNIX utilities and commands.

Topics Covered

The following topics were covered during the hands-on workshop:

- Introduction to UNIX and Linux environments
- UNIX shell and command-line interface
- Basic UNIX commands such as pwd, ls, cd, mkdir, rmdir, cp, mv, and rm
- File creation, viewing, editing, and management
- UNIX directories and directory structure
- File permissions and permission-related commands
- Introduction to Bash shell
- Shebang (!/bin/bash) and execution of shell scripts

Proceedings of the Workshop

The workshop commenced with an introduction to UNIX and its significance in operating systems and computing environments. The resource person explained the basic architecture of

A live demonstration of basic UNIX commands was provided. Students were guided through directory navigation, file creation, copying, moving, deleting, and viewing files. The session also demonstrated UNIX file permissions and the importance of access control in a multi-user operating system.

The second part of the workshop focused on **Bash shell programming**. Students were introduced to shell scripts, variables, input/output operations, and basic commands. The use of the **#!/bin/bash shebang line** and the procedure for creating, granting execution permission, and running shell scripts were demonstrated.

Students actively participated in the hands-on exercises and executed the commands and programs in the **UNIX/Cygwin/PUTTY** environment. Common command-line errors and troubleshooting methods were also discussed during the session.

Hands-on Activities

Students performed practical exercises involving:

- Navigating through directories using **UNIX commands**.
- Creating and managing files and directories.
- Copying, moving, and deleting files.
- Checking and modifying file permissions.
- Using commands such as **grep, head, and echo**.
- Creating and executing **Bash shell scripts**.
- Working with **shell variables**.
- Executing simple system-information shell programs.
- Identifying and correcting common **command-line errors**.

Learning Outcomes

At the end of the workshop, students were able to:

- Explain the basic concepts and working environment of UNIX.
- Use essential UNIX commands through the command-line interface.
- Create and manage files and directories.
- Understand and apply UNIX file permissions.
- Write and execute basic Bash shell scripts.
- Use basic UNIX utilities for file and text processing.
- Identify and troubleshoot common shell execution errors.
- Relate theoretical Operating Systems concepts to practical UNIX-based environments.

Outcome of the Workshop

The workshop provided students with valuable practical exposure to UNIX and shell programming. The hands-on approach helped students gain confidence in using command-line tools and executing shell scripts. The activities also strengthened their understanding of operating system concepts and prepared them for further practical work involving UNIX/Linux environments.

Conclusion

The **“UNIX Essentials: Hands-on Workshop”** was successfully conducted by the Department of MCA. The combination of demonstrations and hands-on exercises enabled students to gain practical knowledge of UNIX commands, file management, permissions, and shell programming.

The active participation and interaction of the students contributed to the successful completion of the workshop. The session served as an effective platform for enhancing students' practical skills and reinforcing the concepts learned as part of their Operating Systems curriculum.