Malnad College of Engineering

(An Autonomous Institute under VTU)

Report on Student Development Program on "Linux System Programming and Internals"

Title: Linux System Programming and Internals
Date: 16 February, 2024
Time: 2pm
Speaker: Dr. Vishwa Kiran S

About the speaker: Dr. Vishwa Kiran S boasts over 20 years of multifaceted experience in Information Technology (IT), including six years in research, five years in software development, and fifteen years in corporate training. Recognized for his expertise, he has been the preferred trainer for esteemed companies like Volvo and Siemens, delivering tailored sessions and contributing to lab experiment restructuring and formulation. Dr. Vishwa Kiran's practical approach, honed through academic pursuits like his full-time PhD scholarship, is complemented by his adeptness in report-making and presentation skills, making him a versatile and invaluable asset in the IT domain.

Introduction:

The recent talk held at Malnad College of Engineering (New Computer Lab) featuring Dr. Vishwa Kiran S provided participants with practical insights into the intricacies of Linux System Programming and Internals, offering hands-on experience and valuable knowledge on the subject.

Objectives:

- **Understanding the distinction between a program and a process:** Differentiating the concepts of program and process to lay the foundation for further exploration.
- **Exploring process attributes:** Delving into the various attributes associated with processes, such as process ID (PID), to comprehend their significance in system programming.
- **Demonstrating how to write a program to print process ID:** Providing practical guidance on writing code to retrieve and display process IDs, offering hands-on experience in system programming.

- **Introduction to system calls:** Familiarizing participants with system calls, essential functions provided by the operating system for program execution.
- **Explaining the fork() system call and its purpose:** Clarifying the role and significance of the fork() system call in process creation and management.
- **Illustrating the usage of multiple forks() in a program:** Showcasing practical examples of employing fork() system calls to create and manage multiple processes within a program.
- **Demonstrating multitasking through a program:** Presenting a program that showcases multitasking capabilities, highlighting the concurrent execution of multiple processes.
- **Explaining shared memory and its application:** Providing insights into shared memory mechanisms and their utilization for inter-process communication.
- **Emphasizing file handling concepts:** Discussing file operations within the context of system programming, including file creation, reading, and writing.
- **Encouraging hands-on experimentation:** Facilitating an interactive learning environment where participants can actively engage with the concepts through practical exercises and coding tasks.

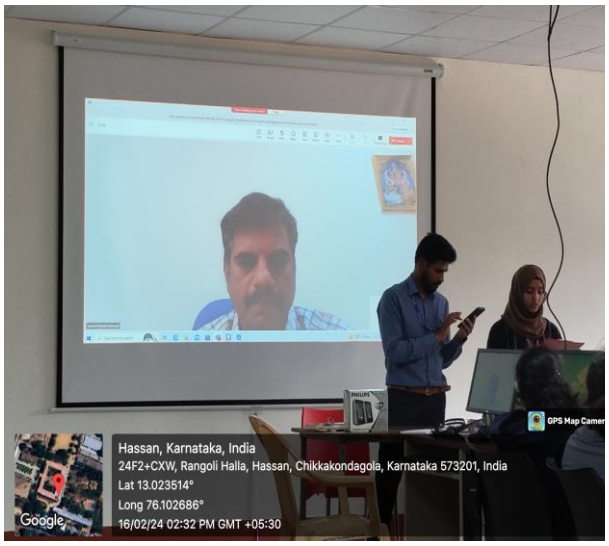
Audience Interaction:

The interactive nature of the talk sparked lively discussions, with speaker Dr. Vishwa Kiran S actively fielding questions from the audience. His adeptness in providing real-world examples and practical insights fostered a vibrant exchange of ideas, enriching the overall experience for attendees.

Conclusion:

The session proved instrumental in equipping students with a profound insight into the evolving landscape of Operating Systems. Led by speaker Dr. Vishwa Kiran S, participants embarked on a journey through the historical evolution, contemporary breakthroughs, industry applications, and ethical considerations surrounding Operating Systems.

Gallery: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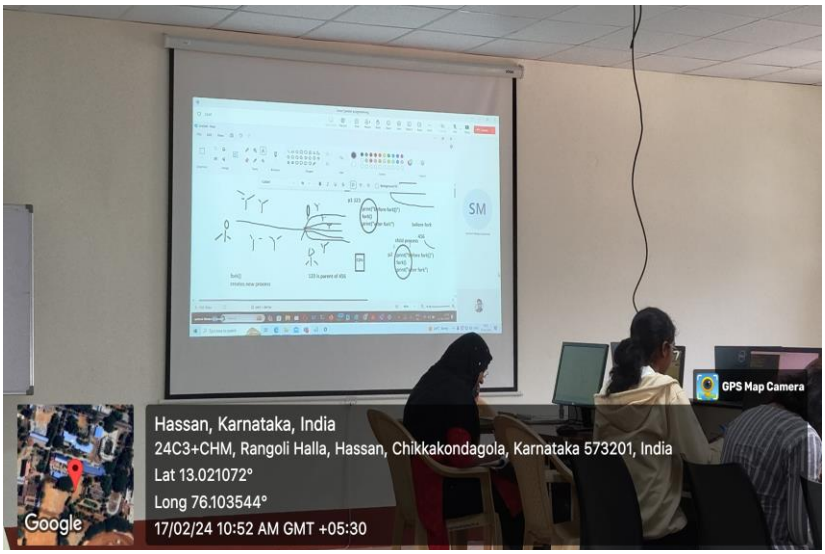
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