NEW HORIZON
COLLEGE OF ENGINEERING
Autonomous College Permanently Affiliated to VTU, Approved by AICTE & UGC
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WORKSHOP

Report on: OS PERSPECTIVE FOR FULL STACK DEVELOPMENT

Date: 04-05-2024

Timing: 11:00 a.m.

Venue: MCA Department, NHCE

Faculty Programme Co-ordinators: Dr Arpana Prasad, Associate Professor

Convenor: Dr. V. Asha

Participants: MCA Students (MCA)

No. of participants:56

Feedback link: https://forms.gle/SZ1U7ugAwrvVJawcA

Poster:

Brief profile of the expert:

Mrinal Sharma is a Full Stack Developer at Cronbay Technology, with expertise in React, Node.js, and Express. A passionate tech enthusiast, Mrinal brings a strong commitment to continuous learning and innovation in the ever-evolving field of web development. His technical skills, combined with a keen eye for detail, make him a valuable asset in building dynamic and efficient applications. Mrinal's dedication to his craft is evident in his pursuit of excellence and his ability to stay ahead of the curve in the fast-paced world of technology.

Objective:

The objective of the "OS Perspective for Full Stack Development" workshop was to provide participants with a comprehensive understanding of how operating systems (OS) influence and interact with full stack development. This workshop aims to bridge the gap between software development and system-level knowledge, equipping developers with insights into OS concepts like process management, memory allocation, file systems, and networking. By understanding these underlying principles, participants will learn to optimize their code, troubleshoot system-level issues, and make informed decisions that enhance the performance, scalability, and security of full stack applications. The workshop was designed to deepen developers' technical expertise and broaden their perspective on how software interacts with hardware and system resources.

Content:

1. Introduction to Full Stack Development and OS

- Overview of Full Stack Development (Front-end, Back-end, and Database)
- Importance of Understanding OS in Full Stack Development
- The OS as the Foundation of Application Environments

2. Process Management in Full Stack Applications

- How Operating Systems Handle Processes and Threads
- Managing Server Processes (e.g., Node.js, Python)
- Multi-threading and Concurrency in Full Stack Applications
- OS Impact on Application Performance and Scalability

3. Memory Management and Full Stack Development

- Memory Allocation in Full Stack Environments
- How the OS Manages Memory for Running Applications
- Avoiding Memory Leaks and Efficient Memory Usage in Development
- Role of OS in Garbage Collection and Memory Optimization

4. File System Operations

- Understanding File Systems and Their Interaction with Applications
- Handling File Operations in Web Applications (Upload, Download, Storage)
- Managing Large Data Files and Databases
- File Permissions, Access Control, and Security Considerations

5. Networking and OS in Full Stack Development

- OSI Model and Its Relevance to Full Stack Development
- Role of OS in Managing Network Communications (TCP/IP, HTTP/HTTPS)
- Network Security and Data Transmission
- Configuring Network Settings for Web Servers and Applications

6. OS-Level Security Considerations

- OS Security Features and Their Importance in Full Stack Development
- Implementing Security Measures in Development (e.g., SSL/TLS)
- OS-Level User and Permission Management for Secure Applications

CONCLUSION:

Enhanced Performance and Stability: Understanding OS management of processes, memory, and networking enables developers to create more efficient and reliable applications. Insights into these areas allow for better resource optimization, effective concurrency management, and improved troubleshooting, leading to more robust and scalable solutions. Effective use of OS tools and technologies, such as system calls, CLI commands, and containerization, enhances development and deployment processes. Mastery of these tools enables developers to streamline application setup, deployment, and management, improving overall workflow and efficiency.

SNAPSHOTS


GPS Map Camera
Bengaluru, Karnataka, India
Work, New Horizon College Of Engineering Vishveshwaraya Block, New Horizon College of Engineering, Outer Ring Road, Near, Marathalli, Bellandur Main Road, Kaverappa Layout, Kadubeesanahalli, Kadabeesanahalli, Bengaluru, Karnataka 560103, India
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Long 77.693153°
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By Mahe_9505


By Mahe_9505

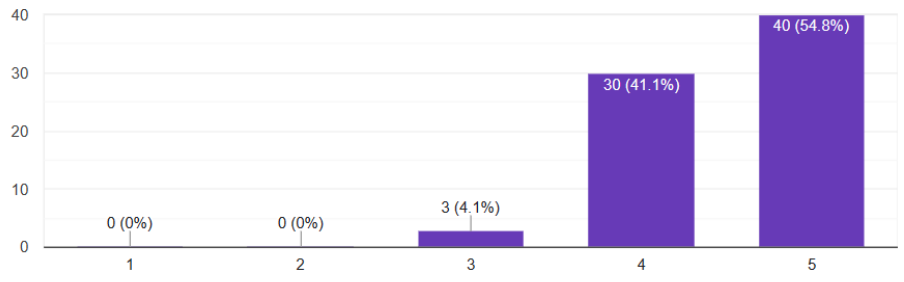
Feedback from students

Feedback

Quality of the content of the training.

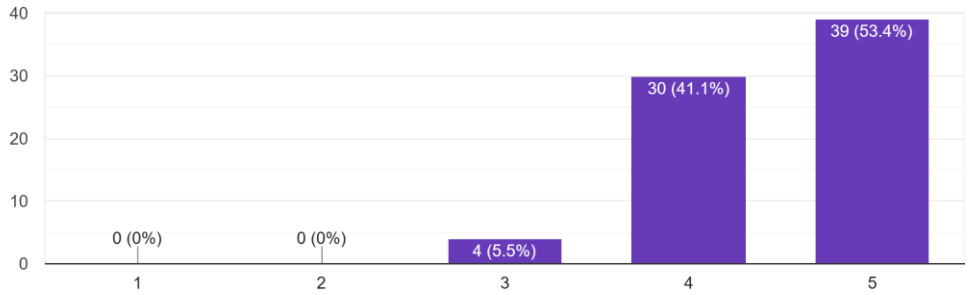
Copy

73 responses



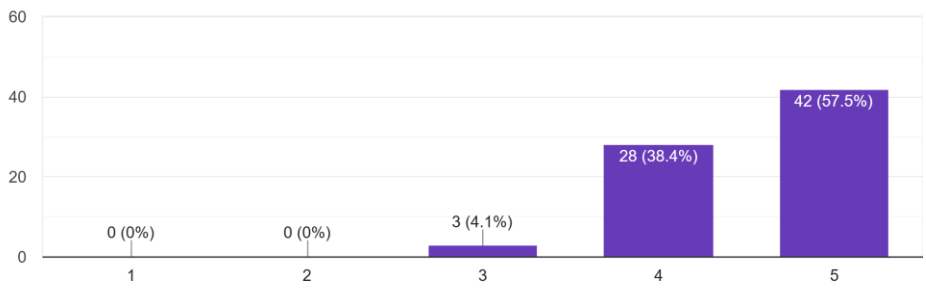
Clarity of the presentation.

73 responses



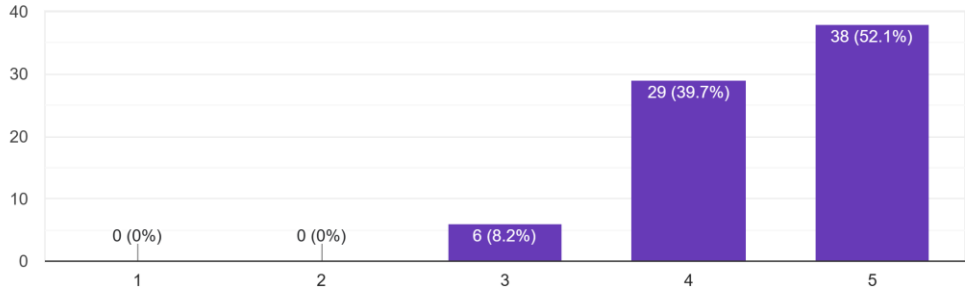
Effectiveness of the examples depicted during the training.

73 responses



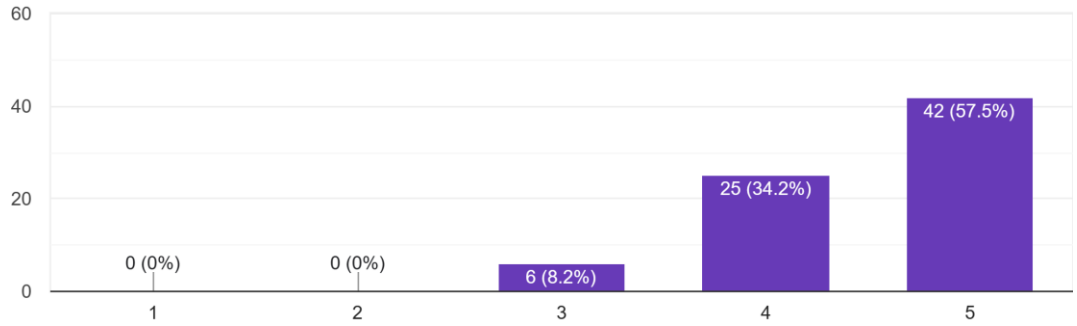
What is your understanding from the session?

73 responses



Rate the relevance of the topic.

73 responses



Sample Participation Certificate

NEW HORIZON
COLLEGE OF ENGINEERING

Department of MCA

Certificate of Participation

This is to certify that Shruti has attended an Expert Talk on 'Introduction to Business Intelligence' on 4th May 2024 organized by Department of Master of Computer Application, New Horizon College of Engineering, Bengaluru. The talk was delivered by Mr. Mrinal Sharma , Cronbay Technologies.

Dr. V. Asha
Prof. & Head - MCA, NHCE

Dr. Manjunatha
Principal, NHCE

Outcome:

Participants gain a deeper understanding of how operating systems manage processes, memory, and networking, leading to more efficient and reliable application development. This knowledge helps in optimizing resource usage, managing concurrency, and troubleshooting performance issues effectively.

Dr. Arpana Prasad
Faculty Co-ordinator

Dr. V. Asha
Head of Department, MCA