REPORT

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Title of the presentation - **macOS : Comparison with Linux, Windows**
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INTRODUCTION:

macOS is a Unix-based operating system developed by Apple Inc., designed to provide a seamless and optimized experience for Mac hardware. First introduced as Mac OS X in 2001, it has since evolved into a stable, secure, and high-performing OS known for its intuitive user interface and efficient resource management.

The system is built on the XNU (X is Not Unix) kernel, which integrates Mach, BSD, and I/O Kit to offer strong multitasking, memory management, and security features. Unlike Windows, which dominates in software compatibility and gaming, or Linux, which thrives on open-source flexibility, macOS prioritizes a closed, streamlined ecosystem that ensures tight hardware-software integration.

The comparison of macOS with Windows and Linux highlighted key differences in usability, customization, and security. While macOS offers a polished and cohesive user experience, Windows provides extensive third-party software support, and Linux stands out for its open-source adaptability.

The layered structure of macOS, including its kernel, system services, and user interface, ensures efficient performance and smooth operation. By analyzing its block diagram and system components, we gained valuable insights into how macOS balances security, efficiency, and user experience, making it a preferred choice for professionals, creatives, and Apple enthusiasts.

GEO-TAG PHOTO :

CONCLUSION / OUTCOME :

This presentation provided a deeper understanding of macOS, its internal architecture, and how it compares with Windows and Linux in terms of usability, security, and system efficiency. Examining the macOS block diagram and system components helped clarify its layered structure and the role of the XNU kernel in maintaining system stability. The comparative analysis also highlighted the trade-offs between macOS's streamlined, controlled environment and Linux's flexibility or Windows' widespread adoption. Overall, this learning experience reinforced the importance of operating system design in optimizing performance, security, and user experience.