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**Operating System**

An operating system (OS) is a crucial software that manages and controls computer hardware, providing a user interface and facilitating application execution.

It acts as an intermediary between the user and the hardware, ensuring seamless communication and resource allocation. OS functions include process management, memory management, file system management, and device management.

Process management handles concurrent execution of tasks, memory management allocates system memory to processes, file system management organizes and maintains files on storage devices, and device management coordinates hardware components.

OS user interfaces range from command-line interfaces (CLI) to graphical user interfaces (GUI). They also offer security features, safeguarding system and user data from unauthorized access and malicious activities. Operating systems also enable networking, enabling computers to communicate and share resources over networks.

**GitHub**

GitHub is a web-based platform that revolutionized collaborative software development and version control. Founded in 2008, it serves as a distributed version control system, allowing developers to work on projects and track changes to code.

Its Git repository hosting service is a key feature, allowing developers to easily contribute to projects and manage code versions.

GitHub fac

ilitates collaboration through features like pull requests, issues, and project boards. It has played a significant role in the open-source community, hosting code from many projects.

It supports continuous integration and continuous deployment (CI/CD) through integrations with popular tools, ensuring high-quality software. GitHub also serves as a platform for documentation, allowing developers to create and maintain project wikis and documentation.