

What is Kernel and write its main functions?

In an operating system, the kernel is the core component that manages system resources and provides essential services to software applications. It acts as a bridge between software and hardware, allowing programs to communicate with and utilize the computer's resources effectively. The kernel's main role is to ensure the stability, security, and overall functionality of the operating system.

Function of Kernel: -

- **Process management:** Creates, schedules, and manages processes.
- **Memory management:** Allocates and deallocates memory for processes.
- **Device management:** Controls and interacts with hardware devices.
- **File system management:** Manages files and storage.
- **System call interface:** Provides a way for applications to interact with the kernel.
- **Security and protection:** Enforces security policies and protects system resources.
- **Interrupt handling:** Handles hardware interrupts and exceptional events.