

ICT

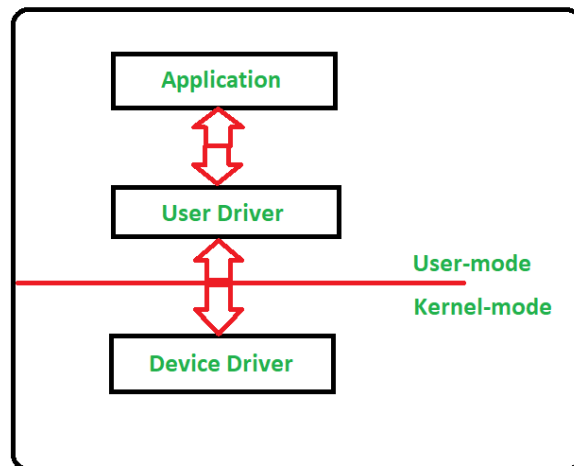
LECTURE NOTES

DEVICE DRIVERS

Device Drivers:

Device Driver in computing refers to a special kind of software program or a specific type of software application that controls a specific hardware device that enables different hardware devices to communicate with the computer's Operating System. A device driver communicates with the computer hardware by computer subsystem or computer bus connected to the hardware.

Device Drivers are essential for a computer system to work properly because without a device driver the particular hardware fails to work accordingly, which means it fails in doing the function/action it was created to do. Most use the term Driver, but some may say Hardware Driver, which also refers to the Device Driver.



Types of Device Driver:

For almost every device associated with the computer system there exist a Device Driver for the particular hardware. But it can be broadly classified into two types i.e.

Kernel-mode Device Driver:

This Kernel-mode device driver includes some generic hardware that loads with the operating system as part of the OS these are BIOS, motherboard, processor, and some other hardware that

are part of kernel software. These include the minimum system requirement device drivers for each operating system.

User-mode Device Driver:

Other than the devices which are brought by the kernel for working the system the user also brings some devices for use during the using of a system that devices need device drivers to function those drivers fall under User mode device driver. For example, the user needs any plug-and-play action that comes under this.

BIOS:

The basic input output system (BIOS) is the most fundamental driver on a computer. It is located in a read-only memory (ROM) chip, which ensures that BIOS will be available even when the hard disk is formatted. It is in charge of booting a computer and providing it with a set of instructions during this process. It also performs power-on self-tests (POST) that are required during startup. The BIOS also provides drivers for the basic hardware, such as keyboards and monitors, to ensure that they interface with the operating system to function as intended.

Lecturer Izazullah

GPGC Charsadda