İŞLETİM SİSTEMLERİ TERMİNOLOJİ

Bus:	One or more CPUs, device controllers connect through common **bus** providing access to shared memory
Bootstrap:	**Bootstrap** program is loaded at power-up or reboot, initializes all aspects of system, loads operating system kernel and starts execution.
Multitasking system:	In **multitasking systems**, the CPU executes multiple processes by switching among them, but the switches occur frequently, providing the user with a fast response time. Consider that when a process executes, it typically executes for only a short time before it either finishes or needs to perform I/O.
Multiprogrammed system:	The operating system keeps several processes in memory simultaneously. The operating system picks and begins to execute one of these processes. Eventually, the process may have to wait for some task, such as an I/O operation, to complete. In a **multiprogrammed system**, the operating system simply switches to, and executes, another process. When that process needs to wait, the CPU switches to another process, and so on.
Linker:	Source files are compiled into object files that are designed to be loaded into any physical memory location, a format known as a relocatable object file. The **linker** combines these relocatable object files into a single binary executable file.
Loader:	A **loader** is used to load the binary executable file into memory, where it is eligible to run on a CPU core
CPU scheduler:	The role of the **CPU scheduler** is to select from among the processes that are in the ready queue and allocate a CPU core to one of them.
Concurrent system:	A **concurrent system** supports more than one task by allowing all the tasks to make progress.
Parallel system:	A **parallel system** can perform more than one task simultaneously.
Deadlock:	**Deadlock** is a situation where a set of processes are blocked because each process is holding a resource and waiting for another resource acquired by some other process.
Kernel:	A **kernel** is the core of the operating system. It is the first program of the operating system, which is loaded into the primary memory to begin the system's operation. It is kept inside the main memory until the system is switched off. It serves as a bridge between the system's application software and its hardware.
Program:	**Program** is passive entity stored on disk (executable file). It stores a group of instructions to be executed.
Process:	A **process** is a program in execution. Program becomes **process** when an executable file is loaded into memory so that it can be executed by CPU.
Fragmentation:	As processes are loaded and removed from memory, the free memory space is broken into little pieces. It happens after sometimes that processes cannot be allocated to memory blocks considering their small size and memory blocks remains unused. This problem is known as **fragmentation**.

Internal Fragmentation:	In this fragmentation, the process is allocated a memory block of size more than the size of that process. Due to this some part of the memory is left unused and this cause **internal fragmentation**.
External Fragmentation:	In this fragmentation, although we have total space available that is needed by a process still we are not able to put that process in the memory because that space is not contiguous. This is called **external fragmentation**.
Paging:	**Paging** is a memory management scheme that eliminates the need for contiguous allocation of physical memory. It divides the physical memory into fixed-size blocks that are known as frames and also divide the logical memory into blocks of the same size that are known as pages.
Swapping:	**Swapping** is a mechanism in which a process can be swapped temporarily out of main memory (or move) to secondary storage (disk) and make that memory available to other processes. At some later time, the system swaps back the process from the secondary storage to main memory.
Virtual Memory:	**Virtual Memory** is a storage scheme that provides user an illusion of having a very big main memory. This is done by treating a part of secondary memory as the main memory. In this scheme, User can load the bigger size processes than the available main memory by having the illusion that the memory is available to load the process.