# INPUT-OUTPUT MANAGEMENT PART 1, I/O MANAGEMENT, I/O SCHEDULING, SCHEDULING ALGORITHMS

## INPUT-OUTPUT MANAGEMENT

Input, Output, and Processing all three are major and sequential operations in a computer.

Not all the operations have all three steps in a sequence, means some operations have just input and output like using internet on laptop or smartphone.

So we can say that Input and output operations are the major and primary operations.

How Operating system is responsible for Input-Output management?

An Operating system in a computer is only responsible for Input / Output management and organize I/O operations along with respective and all associated I/O devices.

Each device have its own drivers software. Once they installed on a computer, they make permanent contact with the OS.

After this communication the OS take control on these drivers to control their respective devices.

For this some inbuilt system software are already available in an OS.

Every deice can perform multiple functions in every different state.

1. At which time which device perform which operation,
2. how this execution take place,
3. how to arrange requests made by devices

is comes in Input Output management.

## IO SCHEDULING

1. Input/output (I/O) scheduling is the method
2. operating systems use to decide
3. in which order I/O operations are going to be queued
4. For processing

I/O Requests in operating systems:

1. Generate by I/O devices
2. Device drivers and system software works together

Three steps performance as per given below:

1. I/O Traffic Controller

2. I/O scheduler
3. I/O device handler

**I/O TRAFFIC CONTROLLER**

1. Continuously check for all or at least one path available
2. If multiple path available then selects one best suitable
3. If all paths are occupied, analyze which path will be available ASAP

**I/O scheduler**

1. Allocates the devices, resources and communication channels
2. In case of heavy traffic of I/O requests, decide which request should be served first
3. In case of heavy traffic of I/O requests, manage multiple queues

**I/O Device Handler**

1. Manages the I/O interrupts (if any generates or inbuilt available)
2. Selects best suitable scheduling algorithms

Mostly used I/O handling algorithms are as per given below:

1. FCFS (First come first server)
2. SSTF (Shortest seek time first)
3. Look
4. SCAN

    4.1 N-Step Scan

    4.2 C-SCAN

    4.3 C-LOOK