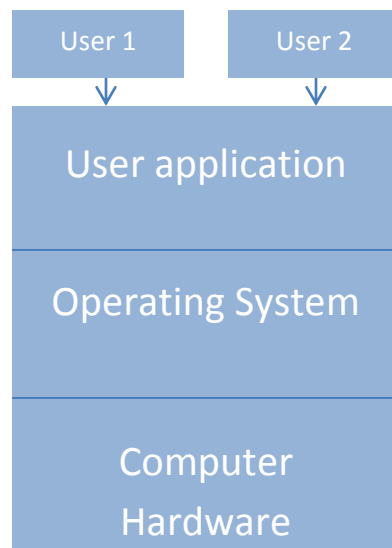# SUB. OPERATING SYSTEM
UNIT 1: INTRODUCTION & BACKGROUND

(SHORT DISCRIPTION OF SOME TOPICS)

Operating System: What is OS?
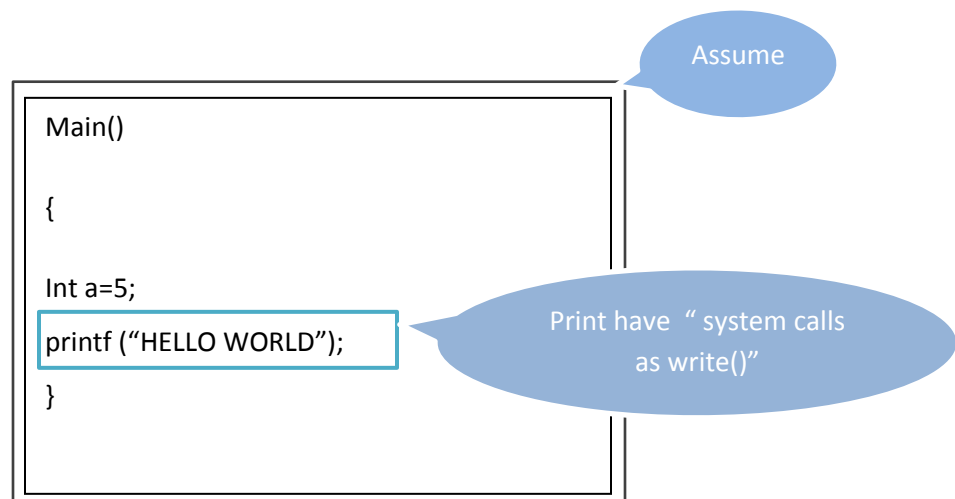
Interface between user and computer hardware.

Means user can't directly interface with hardware, so user needs operating System.

User 1	User 2

User application
Operating System
Computer Hardware

SYSTEM CALLS : System call is a function which is use to request a service of an operating system.

Eg. In the bellow program write () is system call to print some thing on your computer.

Assume

```
Main()

{

Int a=5;

printf ("HELLO WORLD");

}
```

Print have " system calls as write()"

Write() is a system call which is internally calling the service of program.

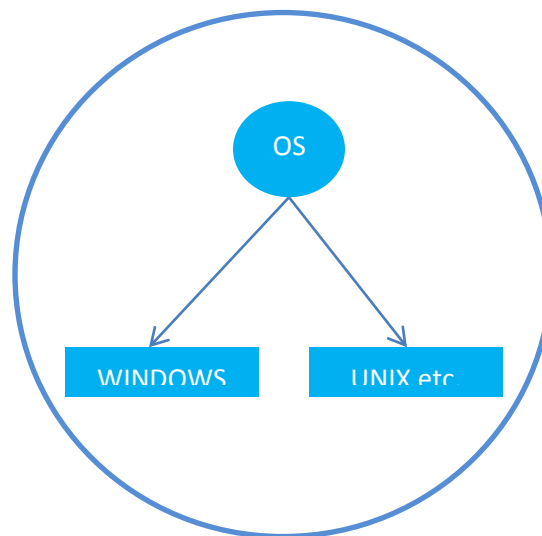## O.S. : is also called as resource allocator.

(inside computer – Various resource)
Because OS. Is responsible to allocating various resources of computer resource (memory, data, etc.)

OS. Is like as Government.
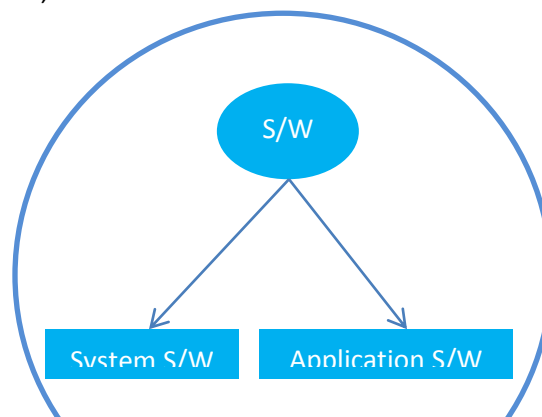OS. Is a function as government.

Eg.

```
                    ┌─────┐
                    │ OS  │
                    └─────┘
                   ╱       ╲
                  ╱         ╲
          ┌──────────┐  ┌──────────┐
          │ WINDOWS  │  │ UNIX etc.│
          └──────────┘  └──────────┘
```

Software

(1) **System software-** Windows, Unix, Any OS. Etc…
(2) **Application Software** - C, Java, C++ etc….

```
                    ┌─────┐
                    │ S/W │
                    └─────┘
                   ╱       ╲
                  ╱         ╲
          ┌──────────┐  ┌──────────────┐
          │System S/W│  │Application S/W│
          └──────────┘  └──────────────┘
```

System S/W known architecture of computer H/W so this can only interact with your computer H/W.

Application S/W only interact with computer H/W with the help of system H/W.

Goal of OS. :-
1) Primary goal is conveniences
2) Secondary is Efficiency.

Primary goal?
"windows is developed " Primary goal is convenience. Convenience means EASY TO USE.
windows is convenient to user.
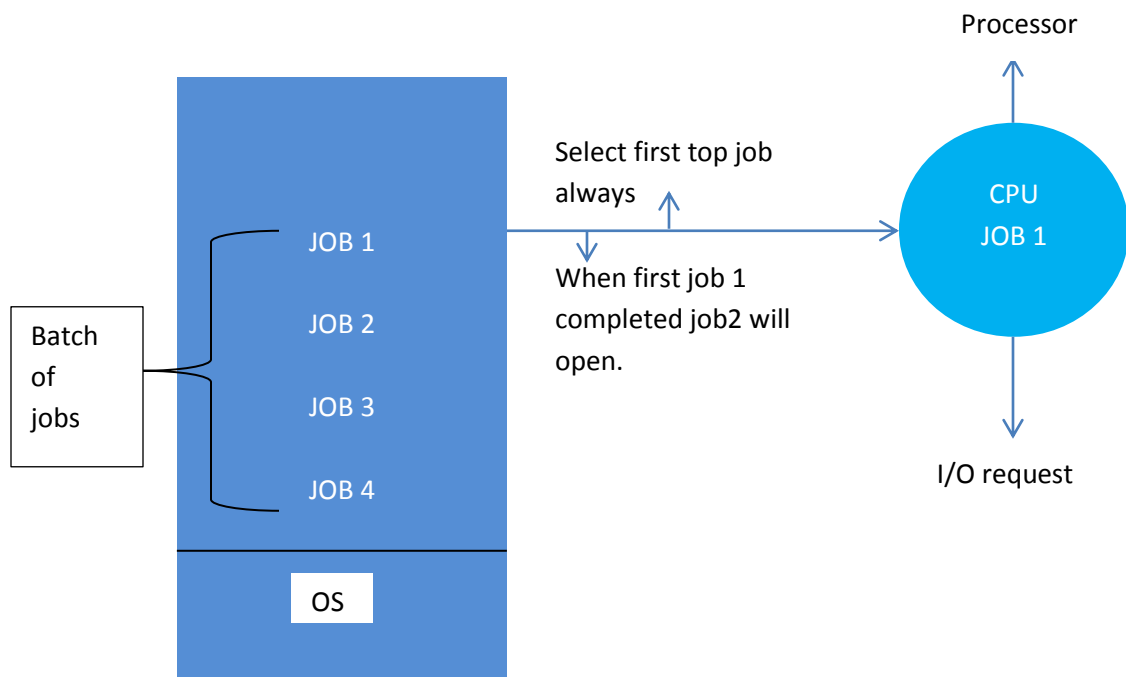
"UNIX" Primary goal is efficient.
Unix is very much efficient. Not so convenient to user.

People use windows for client system.

Types of OS :-

1) Batch OS:-

Eg. IBM

Processor

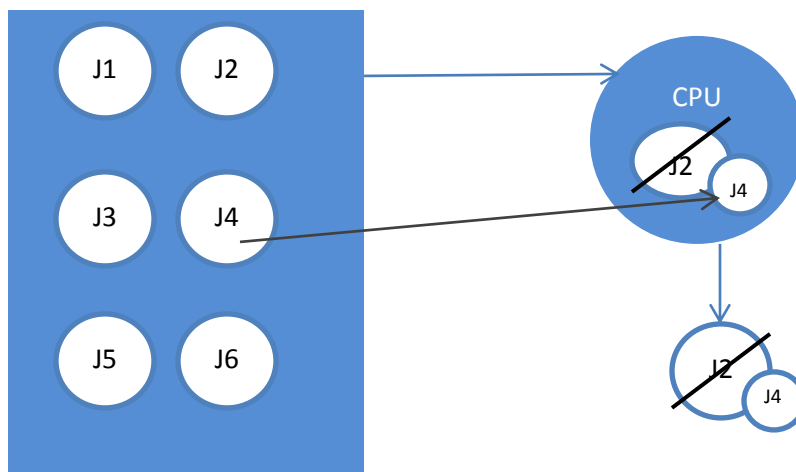|		
Batch of jobs	JOB 1	Select first top job always
	JOB 2	When first job 1 completed job2 will open.
	JOB 3	
	JOB 4	
	OS	

CPU
JOB 1

I/O request

Assume various jobs located into memory as a batch.

Initial pointer on first job.

(CPU go for I/O operation) then other job will wait until job completely completed. (means all CPU and I/O operation completed)

Major Disadvantage:- CPU idle for longer time until 1st job completed I/O operation.

(CPU becomes ideal until job1 promoted by completed by I/O operation)

2) Multi Programming OS :- It select available jobs-

When CPU become idle and give I/O request immediately CPU select the another job form available job to CPU idleness is reduced.

Advantage:- Increased CPU utilization.

Priority :- Priority is a value which is assigned by OS at time of process creation.

Process State:- The process state contains the current state where the process is residing.

List of Open File: What are file open in process that's file information is given in the list of open devices.

The attributes of process is called as context of process.

The process will have various status.

1) New Status

2) Ready status

3) Running Status

4) Wait and block status

5) Completion state & termination status

6) Suspend ready status

7) Suspend block / suspend wait status.

Operation the process:- Various operation performed by process

1) Creating Of process

2) Scheduling of the process (Process scheduling)

3) Execution of the process

4) Termination of process