

EVOLUTION OF OS :

- > **SERIAL PROCESSING :** From 1940 to 1950 there was no OS . There was a bare machine . resources of this system are dedicated to a single program . programming on bare machine results low productivity .Next evolutionary step of computer system come by the usage of I/O devices such as punch cards, paper tape and language translators .
- > **BATCH PROCESSING :** Batch is defined as a group of jobs with similar needs . The operating system allow user to form batches . computer executes each batch considering them as a single process is called batch processing .In this there was a concept of SPOOLING to overcome the problem of speed mismatch . Hence SPOOLING stands for simultaneous peripheral operations online . This absorbs surplus processor time by performing I/O transfer for other jobs. Spooling is the multiprogramming application
- > **MULTIPROGRAMMING :** multiprogramming increases CPU utilisation by organising jobs in such a manner that CPU has always one job to execute . Multiprogramming is the concurrent execution .In this at the same time more than one program can be executed due to high speed of CPU .
- > **MULTI TASKING OR TIME SHARING :** Time sharing is a logical extension of multiprogramming . In such system there are more than one user interacting the system at the same time . A multitasking system uses CPU Scheduling and multiprogramming to provide each user with a small portion of time shared computer .
- > **NETWORK :** An operating system which includes software to communicate with other computer through a network is called network OS .
- > **PEER TO PEER :** a computer in a peer to peer network can work as a server or client that is it requires both server and client software windows NT and 95 both are peer to peer OS which includes many services and utilities that facilitates networking.
- > **CLIENT SERVER :** A computer system in which server program is installed to provide various services for their client is called server . while other machines in which depends on server machine to provide their services is called as client.
- > **MULTI PROCESSOR :** A multiprocessor system consists of a set of processors that share a set of physical memory blocks over an interconnection network . A multiprocessor OS controls and manage the hardware and software resources .
- > **DISTRIBUTED :** Distributed OS are a OS for a network of autonomous computers connected by a communication network through a message passing mechanism . A distributed OS controls and manages the hardware and software resources of a distributed system .

PROCESS :

A process is the smallest unit of work individually schedulable by an operating system .

PROCESS STATES :

- > **NEW :** When the process is created and transferred from hard disk to RAM then OS is at a new state .
- > **READY :** In this the process is waiting to be assigned to a processor through a short term scheduler .
- > **WAITING :** In this process is waiting or blocked for some event to occur .
- > **RUNNING :** in this process only instructions are executed
- > **TERMINATED :** in this process is finished after execution .