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EVOLUTION OF OPERATING SYSTEMS

HISTORY OF OPERATING SYSTEM

- ▶ Earlier operating systems were not there
- ▶ With the development of technology, os have also been introduced
- ▶ Earlier in the 1940s, the computer systems used to work on the programs.
- ▶ The users used to input the programs in the machine hardware by using the micro switches
- ▶ In the year 1950, some new technologies were developed .

Evolution of OS

- The evolution of various types of operating system can be briefly described as follows

Serial processing



Batch processing



Multiprogramming



Time-sharing system



Parallel processing system



Distributed system



Real-Time operating system

SERIAL PROCESSING OS

- ▶ Since 1950, the OS started to be in use.
- ▶ Before 1950, there were no OS and the programmers had to directly communicate with the hardware.
- ▶ And before 1950, if a programmer wants to execute the programs, the programmer had to follow the following steps.
- ▶ First type a program or punched card
- ▶ Translate the punch card into a card reader
- ▶ The translated card reader is submitted to the computer, and if any error has occurred, then with the help of the light, an error is indicated.
- ▶ The programmer looks at the main memory and register to verify the reason behind the error.
- ▶ Then outputs are taken from the printers.

BATCH PROCESSING

- ▶ After serial processing, in the mid 1950s introduced simple batch processing, the first operating system.
- ▶ This technology improved the efficiency of scheduling and setup time as an operator loaded user jobs sequentially in batches accessed by monitor software.
- ▶ The monitor processed each job in the order it was loaded.
- ▶ When one job is finished the monitor ran the next job in line from the batch until all jobs completed.

MULTIPROGRAMMING

- ▶ Multiprogramming means executing multiple programs at the same time with the help of a single processor.
- ▶ In this multiple processes can exist in the main memory simultaneously.
- ▶ In multiprogramming, the OS chooses one of the jobs from the main memory and execute it.

TIME- SHARING SYSTEMS

- ▶ Time sharing is a technique for multiple users to share system resources simultaneously.
- ▶ This offers the users an opportunity to interact directly with the computer.
- ▶ Using a terminal and keyboard, each user submits a job request by presenting a transmit key and wait their turn for a response from the processor.
- ▶ The intention of time-sharing is to minimized response time back to the user, reduce idle time, and still maximize processor use.

PARALLEL PROCESSING SYSTEM

- ▶ In parallel processing system, there are multiple processors and in this system all the processors work concurrently.
- ▶ In this type of system, the job is divided into several sub-jobs and then these sub-jobs are distributed among the processors that are present in the system.
- ▶ Parallel processing finishes the job in less time.
- ▶ In this multiple jobs executed in the parallel manner

DISTRIBUTED SYSTEMS

- ▶ It is also called as loosely coupled systems.
- ▶ In a distributed system, two or more nodes are connected to each other but the memory or a clock is not shared by the processors.
- ▶ With the help of communication lines with telephone lines or high - speed buses, the processors communicate with each other.
- ▶ In a distributed system, processors can be different in size and functions.

REAL TIME OPERATING SYSTEM

- ▶ Real time operating system is used when there is a rigid time requirement on the operation of the processors.
- ▶ It is a special purpose operating system.
- ▶ In this system, it is must that the task will be finished in a definite time.
- ▶ There are three kinds of real - time operating system
- ▶ Firm Real - time OS - E.G.Multimedia applications.
- ▶ Hard Real - time OS - E.G. medical imaging systems, industrial control systems, weapon systems, robots, air traffic control systems, etc.
- ▶ Soft Real - time OS - E.G. Multimedia systems, digital audio systems etc.

THANK
YOU