**Operating System Notes:-**

Operating system is imterface btw user and computer hardware.

Any program is user application-Printf recognises monitor

Printf internally calls write system call to comunicate with the monitor

System call is request made by user prgm to os inorder to get any kind of service...

Printf is written using embedded programing..if you use stdio.h header file where printf is written

OS resources hardware and software resources...

Goals of operating sys are:

Primary is convinience and secondary is throughput.

Unix is throughput first efficency later.

Types of os:-

1. Batch os - batch means group..

Multiple jobs loaded into memory..

Group of similar jobs loaded into memory ie main memory...

Resposible of OS is schedule job onto cpu

Time of jobs: Cpu time and IO time

Io - reading and writing files

I/O request causes cpu to become idle in batch os... if job is completed completely then only will be scheduled ....

Problem ... increased cpu idleness causing low throuput...

Throughput ... no of jobs completed for unit time eg ibm os/2

Next os :- multiprogramming OS- ---

Job1 job2 job 3 and os together in memory...

If job is leaving cpu then other job waiting for execution goes for execution...

Eg windows linux etc everyone use multi programming os

Multitasking :---- An extension of multiprogramming os

The jobs will be executed in time sharing mode.... job 2 -,2 nano seconds and once completed will be executed....

Multiple jobs are executed and sharing the cpu in time sharing mode....

Eg round robin algorithm

In nanoseconds there is multitaksing

Next os - multiprocessor system

More than one processor...system

Cpu 1 cpu2 cpu3 and common memory...

More than one cpu in a single system..

Advantages ;;; throughput of system will increase ... it is used in servers

Lakhs and lakhs of transactions are happening together....

If one cpu fails there is other...so fault tolerant system

Economical so lesser cost with 3 cpu without purchasing 3 systems with 3 different system....in i3 i5 i7 have multiples cores not multiple processors... but only one cpu ....some components of cpu like alu etc are multiple.....

CPU 1 CPU2 CPU3

Memory

Operating system shall do

Load balancing and decide which to schedule

Real time systems.....

The systems which are strict deadly time bound are called as real time systems...

No delay while executing instructions for programs....

Real time systems categorised... hard real time and soft real time...

Hard... satellite system and missile systems when each ns is imp

Soft real time : banking software ... not much importance to time minor delay is acceptance... updating bank a/c not

Sxworks VxWorks and RTOS are examples

Keep smiling keep learning

Process concept....definition... process is nothing but program under execution...

Initially secondary memory to main memory transfer

Process should reside in the main memory....occupies the primary memory...program is static and passive process is active and dynamic...

Process has various attrubures like process id .process state priority program counter

Genrral purpose register.. list of open files list of open devices protection information

Process state----like ready new state running state etc...in which state process is currently residing...

Priority ... you know

Program counter contains address of next instruction ....in case of RR scheduling to maintain next instruction address...

All the attributes of process is called context of the process stored in PCB ( Process control block..) every process has its own pcb...pcb's stored in main memory...data structure to implement pcb's are doubly linked list... because areay cannot be used because of static memory location ....

Process will have various different states

New:- creation

Ready:one of selected process is dispatched into running state

Run:-only one process in any unit of time

Wait/Block

Ternination:

Suspend ready:

Suspend block