# Lecture Summaries

## l11

a program that acts as an intermediary between a user of a computer and the computer hardware . most systems use a single general-purpose/special purpose processor . a subset of total jobs in system is selected and run via job scheduling . CPU switches jobs so frequently that users have to wait for I/O .

can interact with each job while it is running, creating interactive computing Multiple programs executing in memory If several jobs ready to run at the same time CPU scheduling Timesharing Systems Memory Layout for Multiprogrammed System Desktop PCs Personal Computers – computer system dedicated to a single user . Mostly single user do not need advanced CPU utilization or protection features .

multiprocessor systems Symmetric Multiprocessing Each processor runs an identical copy of the operating system . many processes can run at once without performance deterioration . most modern operating systems have SMP support. OS has to cater for protection of data .

dual-mode operation allows OS to protect itself and other system components . User mode and kernel mode Mode bit provided by hardware Provides ability to distinguish when system is running user code or kernel code System call changes mode to kernel, return from call resets it to user Operating System in Dual Mode Operating System Services The OS structure is divided into many sub-components .