

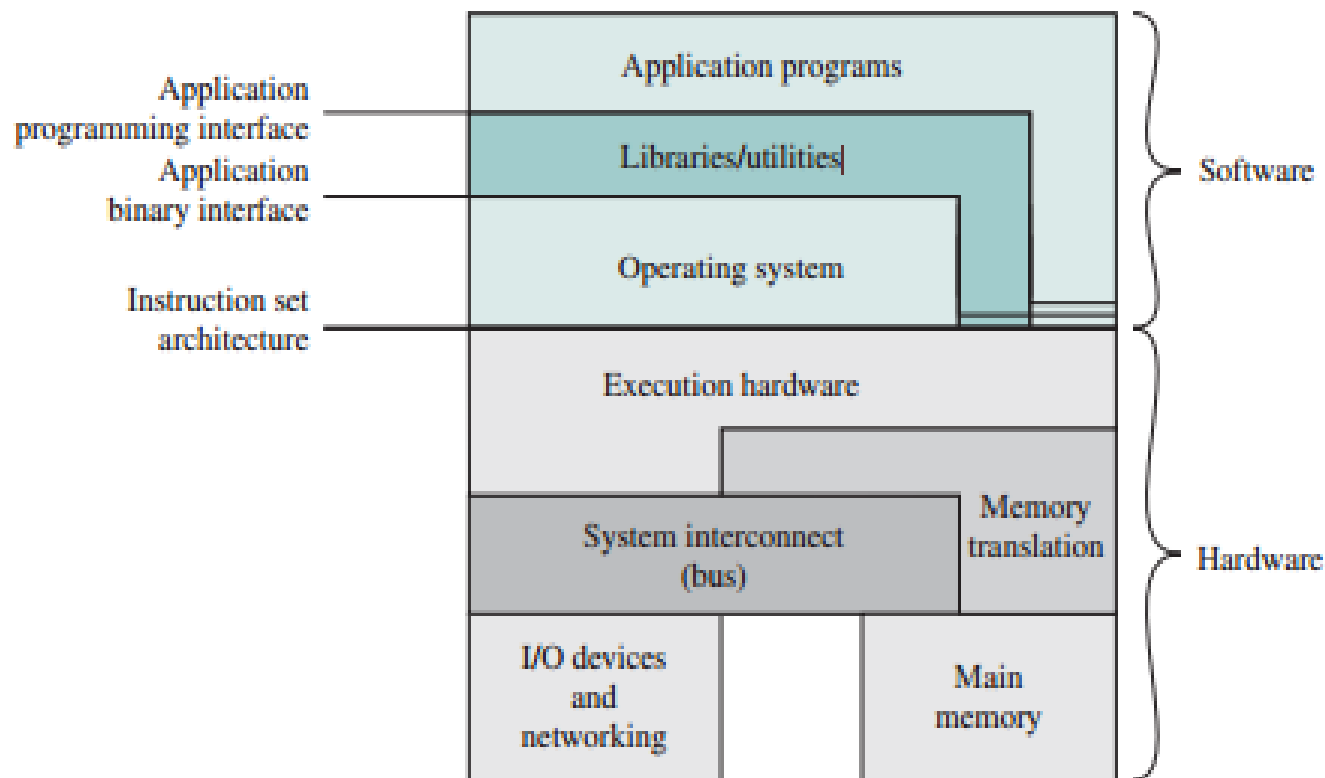
15IT314J- Unit-I

Overview of Operating System

Purpose of Operating System

- **Operating System (OS)** - a set of programs that manage computer hardware resources and provide common services for application software.
- The operating system acts as an interface between the hardware and the programs requesting I/O. It is the most fundamental of all system software programs.

Computer Hardware and Software Structure



Role of Operating System

- Hiding the complexities of hardware from the user.
- Managing between the hardware's resources which include the processors, memory, data storage and I/O devices.
- Handling "interrupts" generated by the I/O controllers.
- Sharing of I/O between many programs using the CPU.

Major issues in Modern Operating System

- **Transparent Persistence**
 - Transparent Persistence is a mechanism for bringing data into RAM implicitly.
 - Complex with many distributed processes associated with one or more instances of a **Persistence_Store**.
 - Transparent persistence can be implemented in many ways, using an Object Oriented Database, Serialized Data, Relational Database, or other form.
- **Political Economy**
 - Resource Management .
 - Resource Management is the scheduling of activities and the resources required by those activities while taking into consideration both the resource availability and the project time.
 - Resource Allocation .
 - Resource allocation is the assignment of available resources to various uses. In the context of an entire economy, resources can be allocated by various means, such as markets or central planning.
 - Real-time being feature
 - All fully automated systems have constraints. The severity of constraints are dependent on the state of technology, so the scale of time matters in that sense.

Operating System as Resource Manager

