27 Lecture - CS501

Important Subjective

1. **What is the main purpose of Interrupt Driven I/O?**
   Answer: The main purpose of Interrupt Driven I/O is to improve system performance by allowing the CPU to perform other tasks while waiting for I/O operations to complete.

   How does Interrupt Driven I/O handle I/O operations?
   Answer: Interrupt Driven I/O handles I/O operations by allowing the device to generate an interrupt signal to the CPU, indicating that it is ready to send or receive data. The CPU then stops its current task and starts executing the interrupt service routine.

   What is an interrupt service routine?
   Answer: An interrupt service routine (ISR) is a program that is executed when an interrupt signal is received. The ISR communicates with the device and transfers data between the device and the CPU's memory.

   What is the role of the device in Interrupt Driven I/O?
   Answer: The role of the device in Interrupt Driven I/O is to generate an interrupt signal when it is ready to send or receive data.

   What are the advantages of Interrupt Driven I/O?
   Answer: The advantages of Interrupt Driven I/O are improved system performance, better responsiveness, and reduced CPU usage.

   How does Interrupt Driven I/O improve system performance?
   Answer: Interrupt Driven I/O improves system performance by allowing the CPU to perform other tasks while waiting for I/O operations to complete.

   What is the disadvantage of Interrupt Driven I/O?
   Answer: The disadvantage of Interrupt Driven I/O is that it introduces overhead due to context switching and interrupt handling.

   Can Interrupt Driven I/O be used with any type of device?
   Answer: Yes, Interrupt Driven I/O can be used with any type of device that generates an interrupt signal.

   How does Interrupt Driven I/O reduce CPU usage?
   Answer: Interrupt Driven I/O reduces CPU usage by allowing the CPU to perform other tasks while waiting for I/O operations to complete, rather than wasting cycles polling for I/O completion.

   What is the difference between Interrupt Driven I/O and polling-based I/O?
   Answer: In Interrupt Driven I/O, the device generates an interrupt signal to the CPU, whereas in polling-based I/O, the CPU continuously polls the device to check if it is ready to send or receive data. Interrupt Driven I/O is generally more efficient than polling-based I/O.