

March 1, 2025

Prerequisites:

- OSI (Open Systems Interconnection) Model: 7 layers
- IP Address, MAC Address, and Port Address.
- A Day in the Life of a Web Page Request

Distributed Database Introduction:

- What is Distributed Databases?
- Design Considerations for Distributed Databases
 - Data Partitioning
 - Replication
 - Consistency and Concurrency Control
 - Network Communication and Latency
 - Security and Privacy

Questions:

- **Question 01:** Define distributed system. Mention a few real time examples of distributed systems.
- **Question 02:** What design principles considered useful for better performance in a distributed system.
- **Question 03:** Mention the advantages of a distributed computing environment over standalone applications. What are the disadvantages of distributed systems?
- **Question 04:** Define scalability. What are the challenges involved in designing scalable distributed system?

Assignment:

A Day in the Life of a Web Page Request

Instructions:

- Writing must be in your own handwriting.
- Page limit: 5 pages, including one page for figure.
- Submission due: *March 8, 2025, at 10:40 AM.*