DSCC

Module 1: Remote Process Communication

Remote Process Communication (RPC): It is a communication mechanism that enables processes or programs to communicate with each other across a network. In the context of a multi-client chat server, it allows clients to send and receive messages through a central server.

Module 2: Remote Procedure Call

Remote Procedure Call (RPC): It is a protocol that one program can use to request a service from a program located on another computer in a network. In this module, it's applied to client-server-based applications where a client sends a request message to a server, and the server processes the request and sends back a response.

Module 3: Remote Method Invocation

Remote Method Invocation (RMI): It is a Java API that allows a program to invoke methods on an object that exists in another address space, often on a different machine. In the context of this module, clients invoke methods on the server side through interfaces.

Module 4: Remote Object Communication

Remote Object Communication: This involves passing remote objects from the server to the client. The client receives a stub object that acts as a proxy for the actual remote object. The client uses this stub object to access and interact with the object on the server.

Module 5: Mutual Exclusion

Mutual Exclusion: It is a synchronization technique that ensures only one process at a time can access a shared resource. The Token Ring algorithm is introduced in this module to solve mutual exclusion issues in process communication by passing a token among processes.

Module 6: Implementation of Cloud Computing Services

Cloud Computing: It is a technology that provides on-demand access to a shared pool of configurable computing resources, such as networks, servers, storage, applications, and services. The module covers different cloud services like Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS).

Module 7: Implementation of Identity Management using Cloud Computing concept

Identity Management: It is the process of identifying, authenticating, and authorizing individuals or systems to access resources. In the cloud computing context, it ensures that only authenticated users have access to specific applications, systems, or IT environments.

Module 8: App Development using Cloud Computing

Cloud Application Development: It involves using cloud computing tools and services to develop, deploy, and manage applications. The module explores various techniques for developing efficient and dynamic applications in a cloud environment, considering factors like scalability and complexity.

Certainly! Here are some potential exam viva questions and answers based on the provided modules:

Module 1: Remote Process Communication

1. **Question:** Explain the concept of multi-client chat server application using Remote Process Communication.

   Answer: In a multi-client chat server, clients communicate with the server, and the server facilitates communication between clients. When a client sends a message, it goes through the server, which then forwards it to the intended recipient client. This ensures concurrent communication among multiple clients.

Module 2: Remote Procedure Call

2. **Question:** Describe the process of Remote Procedure Call (RPC) in client-server applications.

   Answer: RPC is a communication technique where a client sends a request message to a server, typically a procedure or function call. The server processes the request and sends the response back to the client. During this time, the client is blocked until the server finishes processing.

3. **Question:** What are some other types of call semantics in RPC?

   Answer: Other types of call semantics in RPC include "at most once," "at least once," and "exactly once" semantics, which determine how requests and responses are handled in terms of duplication and reliability.

Module 3: Remote Method Invocation

4. **Question:** Explain the concept of Remote Method Invocation (RMI) and its use in creating distributed applications in Java.

   Answer: RMI is a Java API that allows clients to invoke methods on server objects. The methods are implemented on the server side, and clients communicate with these remote objects via interfaces.

5. **Question:** What are the key components involved in RMI, such as remote interface and RMI registry tools?

Answer: The remote interface defines the methods that can be invoked remotely, and the RMI registry is a service that binds remote objects to names, allowing clients to look up and invoke methods on these objects.

Module 4: Remote Object Communication

6. **Question:** Explain the process of passing remote objects from the server to the client in Remote Object Communication.

Answer: In remote object communication, the server passes a stub object to the client through remote interfaces. The client saves the stub object in a variable with the same type as the remote interface, enabling access to the actual object on the server.

Module 5: Mutual Exclusion

7. **Question:** How does the token ring algorithm address the issue of mutual exclusion in process communication?

Answer: The token ring algorithm ensures mutual exclusion by passing a token between processes. Only the process holding the token is allowed to access a shared resource, preventing simultaneous access by multiple processes.

8. **Question:** What are some other algorithms used for achieving mutual exclusion?

Answer: Other algorithms for mutual exclusion include Lamport's Bakery Algorithm, Peterson's Algorithm, and Dekker's Algorithm.

Module 6: Implementation of Cloud Computing Services

9. **Question:** Explain the concept of Storage as a Service in Cloud Computing.

Answer: Storage as a Service is a business model where a larger company rents storage space in its infrastructure to smaller companies or individuals. This provides scalable and cost-effective storage solutions.

10. **Question:** What are some other types of Cloud Services apart from SaaS, PaaS, and IaaS?

Answer: Other types of cloud services include Security as a Service (SecaaS), Database as a Service (DBaaS), and Functions as a Service (FaaS).

Module 7: Implementation of Identity Management using Cloud Computing

11. **Question:** What is the primary goal of identity management in Cloud Computing?

Answer: The main goal of identity management is to ensure that only authenticated users are granted access to specific applications, systems, or IT environments for which they are authorized.

12. **Question:** Name some tools used to implement identity management techniques in the cloud.

Answer: Tools such as Azure Active Directory, Okta, and OneLogin are commonly used for implementing identity management in cloud environments.

Module 8: App Development using Cloud Computing

13. **Question:** How can cloud computing tools and techniques be leveraged for efficient and dynamic application development?

Answer: Cloud computing provides scalable resources, services, and tools that facilitate efficient application development. This includes using platforms like AWS, Azure, or Google Cloud for hosting, databases, and other services.

14. **Question:** Discuss the complexity of application development in the cloud and mention some techniques to address it.

Answer: Cloud application development can involve challenges such as scalability and distributed systems management. Techniques like microservices architecture and containerization (e.g., Docker) are used to address these complexities.

Remember to tailor these questions and answers based on the specific details covered in your coursework or materials.