

Answers for Slides 74 and 75

1. Requirement Engineering Tasks

Requirement Engineering involves the following tasks:

1. **Inception**: Establishes the project scope, defines the problem, and identifies stakeholders.
2. **Elicitation**: Gathers requirements from users and stakeholders, dealing with challenges like scope, understanding, and volatility.
3. **Elaboration**: Expands and refines requirements, developing detailed user scenarios and analysis models.
4. **Negotiation**: Resolves conflicts among stakeholders to agree on a deliverable system.
5. **Specification**: Converts collected requirements into formal documents, creating the Software Requirement Specification (SRS).
6. **Validation**: Ensures the quality of requirements, checking for errors, ambiguities, and conflicts.
7. **Requirements Management**: Manages changes to requirements throughout the project lifecycle.

2. Functional and Non-Functional Requirements of Hotel Management System

Functional Requirements:

1. Room booking and reservation management.
2. Customer check-in and check-out processing.
3. Inventory management for hotel supplies.
4. Billing and payment processing.
5. Reporting and analytics on hotel operations.

****Non-Functional Requirements**:**

1. ****Security****: The system should encrypt customer data and transaction details.
2. ****Performance****: The system should handle up to 1000 concurrent users without delay.
3. ****Usability****: The interface should be user-friendly, with minimal training required.
4. ****Reliability****: The system should have an uptime of 99.9%.
5. ****Scalability****: The system should scale to accommodate future expansions.

3. Characteristics of a Good SRS

A good Software Requirement Specification (SRS) should have the following characteristics:

1. ****Correctness****: All requirements must accurately reflect the customer's needs.
2. ****Unambiguity****: Each requirement should have a single, clear interpretation.
3. ****Completeness****: The SRS should fully describe the system's functionality and constraints.
4. ****Consistency****: There should be no conflicting requirements.
5. ****Verifiability****: Each requirement should be testable and measurable.
6. ****Modifiability****: The SRS should be structured to allow easy changes.
7. ****Traceability****: Each requirement should be traceable to its source and to related system components.

4. Difference between Procedural Design and Object-Oriented Design

****Procedural Design**:**

- Focuses on functions and the sequence of tasks.
- Code is organized as a set of procedures or functions.
- Data is typically global and shared across functions.

****Object-Oriented Design**:**

- Focuses on objects that encapsulate data and behavior.
- Code is organized as a set of interacting objects.
- Data is typically encapsulated within objects, and interaction occurs through method calls.

5. Quality Function Deployment (QFD)

****Quality Function Deployment (QFD)**** is a structured approach to transforming customer needs into detailed engineering specifications. It helps in prioritizing features and aligning the product design with customer expectations. The process involves creating a series of matrices, with the most common being the House of Quality, which maps customer requirements against product capabilities.