

Evolution of Software & Life Cycle Phases

- 1. What is the primary focus of the planning phase in the software development life cycle?**
 - a) Coding the software
 - b) Gathering and analyzing requirements
 - c) Developing a project plan
 - d) Testing the software
- 2. In the SDLC, what is the main objective of the analysis phase?**
 - a) To implement the software
 - b) To gather detailed requirements
 - c) To design the software architecture
 - d) To write test cases

Software Engineering & SDLC Phases

- 3. Which phase of the SDLC involves creating a blueprint of the system?**
 - a) Implementation
 - b) Design and Prototyping
 - c) Testing and Deployment
 - d) Requirements Analysis
- 4. What is the primary activity during the development phase of the SDLC?**
 - a) Testing the system
 - b) Writing and compiling code

- c) Gathering requirements
- d) Designing the system architecture

5. Which phase involves verifying that the software meets the specified requirements before deployment?

- a) Development
- b) Design
- c) Testing
- d) Analysis

Project Management

6. Which of the following is a key aspect of project management in software development?

- a) Coding the software
- b) Maintaining documentation
- c) Managing time, cost, and resources
- d) User training

7. What is included in pre-code planning?

- a) Writing the code
- b) Finalizing the software requirements
- c) Conducting user training
- d) Performing integration testing

Flow Chart and Pseudocode

8. Which of the following best describes pseudocode?

- a) A programming language
- b) A detailed flowchart
- c) An informal high-level description of the operating principle of a program
- d) A type of system design

9. **Why is it important to verify an algorithm?**

- a) To ensure the algorithm runs quickly
- b) To ensure the algorithm performs the desired task correctly
- c) To reduce the lines of code
- d) To simplify the algorithm

10. **What does a flowchart represent in software engineering?**

- a) The source code of a program
- b) The step-by-step solution to a problem
- c) The final product
- d) The data model

Database Management Systems (DBMS)

11. **What are the core components of a DBMS?**

- a) Tables, Forms, Reports, and Queries
- b) Data, Hardware, Software, Users, and Procedures
- c) CPU, Memory, I/O Devices, and Software
- d) Tables, Columns, Rows, and Triggers

12. **What is a significant advantage of using a DBMS?**

- a) Increased redundancy
- b) Improved data sharing
- c) Manual data entry
- d) Lack of security

Database Models

13. **Which database model organizes data in a tree-like structure?**

- a) Flat-file
- b) Hierarchical
- c) Network
- d) Relational

14. **What is a key characteristic of a flat-file database model?**

- a) Data is stored in a single table
- b) Data is organized in a tree-like structure
- c) Data is linked through relationships
- d) Data is stored in XML format

15. **Which database model is best suited for representing complex data relationships?**

- a) Flat-file
- b) Hierarchical
- c) XML

d) Relational

DBMS Architecture & Constraints

16. **What are the three levels of DBMS architecture?**
- a) Physical, Logical, and View
 - b) User, Application, and Data
 - c) Hardware, Software, and Network
 - d) Front-end, Back-end, and Middleware
17. **Which type of constraint ensures that each row in a table is unique?**
- a) Foreign key
 - b) Primary key
 - c) Check
 - d) Default

Database Normalization

18. **What is the main goal of database normalization?**
- a) To increase data redundancy
 - b) To reduce data redundancy and improve data integrity
 - c) To enhance query performance
 - d) To simplify database design
19. **Which of the following is a requirement for a table to be in First Normal Form (1NF)?**
- a) No duplicate columns

- b) No repeating groups or arrays
- c) Every column must be a foreign key
- d) All columns must have unique values

20. **What additional requirement must be met for a table to be in Second Normal Form (2NF)?**

- a) It must be in 1NF and have no partial dependencies
- b) It must have a primary key
- c) It must have a foreign key
- d) It must have no transitive dependencies

21. **What is required for a table to achieve Third Normal Form (3NF)?**

- a) It must be in 2NF and have no transitive dependencies
- b) It must have a composite key
- c) It must have only one column
- d) It must be in 1NF

22. **What is the main requirement for a table to be in Boyce-Codd Normal Form (BCNF)?**

- a) It must be in 2NF
- b) It must be in 3NF
- c) Every determinant must be a candidate key
- d) It must have only atomic values