

1 What are the attributes of good software? Write the basic principles of software engineering code.

2 What is a process? Briefly describe about generic process models.

1. Attributes of Good Software:

- **Functionality:** The software should meet the user's requirements and perform the tasks it was designed for.
- **Reliability:** It should work consistently without crashing or producing errors.
- **Usability:** Easy to use, with a clear interface and simple navigation.
- **Efficiency:** The software should make optimal use of resources, such as memory and processing power.
- **Maintainability:** Easy to fix bugs, update, and improve over time.
- **Portability:** It should work across different environments and platforms.

Basic Principles of Software Engineering Code:

- **Modularity:** Break the system into smaller, manageable modules.
- **Abstraction:** Focus on high-level problems while hiding the complexity.
- **Encapsulation:** Keep data and functions within appropriate boundaries.
- **Separation of Concerns:** Separate different functionalities to make the system easier to manage.
- **DRY (Don't Repeat Yourself):** Avoid duplicating code to reduce errors and improve maintainability.
- **Code Readability:** Write clear, understandable code for easier collaboration and maintenance.

2. What is a Process?

A process is a structured set of activities used to develop software. It defines how to plan, design, build, test, and maintain a software project in an organized way.

Generic Process Models:

- **Waterfall Model:** A linear, sequential approach where each phase (requirements, design, implementation, testing, maintenance) is completed before moving to the next.
- **Incremental Model:** Development happens in small, manageable increments or versions, each adding new functionality.
- **Agile Model:** A flexible and iterative approach that emphasizes collaboration, customer feedback, and adapting to changes throughout development.
- **Spiral Model:** Combines elements of both iterative and waterfall models, focusing on risk analysis at each cycle.
- **V-Model:** Similar to Waterfall but includes validation and verification steps, ensuring each development phase is tested before proceeding.