

1. Software Development Life Cycle (SDLC):

=> SDLC is a structured process followed in Software development to ensure quality and efficiency. It defines phases that a Software project goes through from planning to maintenance.

Phases of SDLC:

1. Requirement Analysis: * collect client/business needs.
* Example: A client wants an E-commerce website with login, product catalog, cart and payment.
2. System Design: * Convert requirements into design documents (UI design, database schema, architecture).
* Example: Decide on front-end (React), back-end (Node.js) & database.
3. Implementation (Coding):
* Actual development starts based on design.
* Example: Developers write login module, product listing, & checkout code.
4. Testing: * verify the software works as expected, find bugs, & fix them.
* Ex: Test login functionality with valid & invalid inputs.
5. Deployment:
* Deliver the system to the client or release it for users.
* Ex: Host the website on AWS.
6. Maintenance:
* provide updates, bug fixes, & improvements after release.
* Ex: Add a new payment gateway (or) fix UI issues after feedback.

2. Understanding the Waterfall Model:

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=> The waterfall model is the earliest SDLC model, where the process flows step by step like a waterfall. Each phase must be completed before moving to the next phases of the waterfall model:

1. Requirement Gathering & Analysis
2. System Design
3. Implementation (Coding)
4. Testing
5. Deployment
6. Maintenance

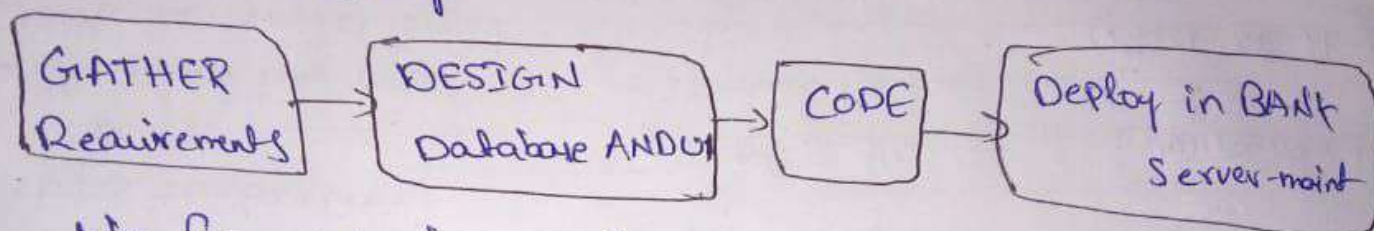
Characteristics:

- => Linear and sequential.
- => No going back (once a phase is complete).
- => Best for projects where requirements are clear and fixed.

REAL WORLD EXAMPLE OF WATERFALL MODEL

=> Banking System Software :-

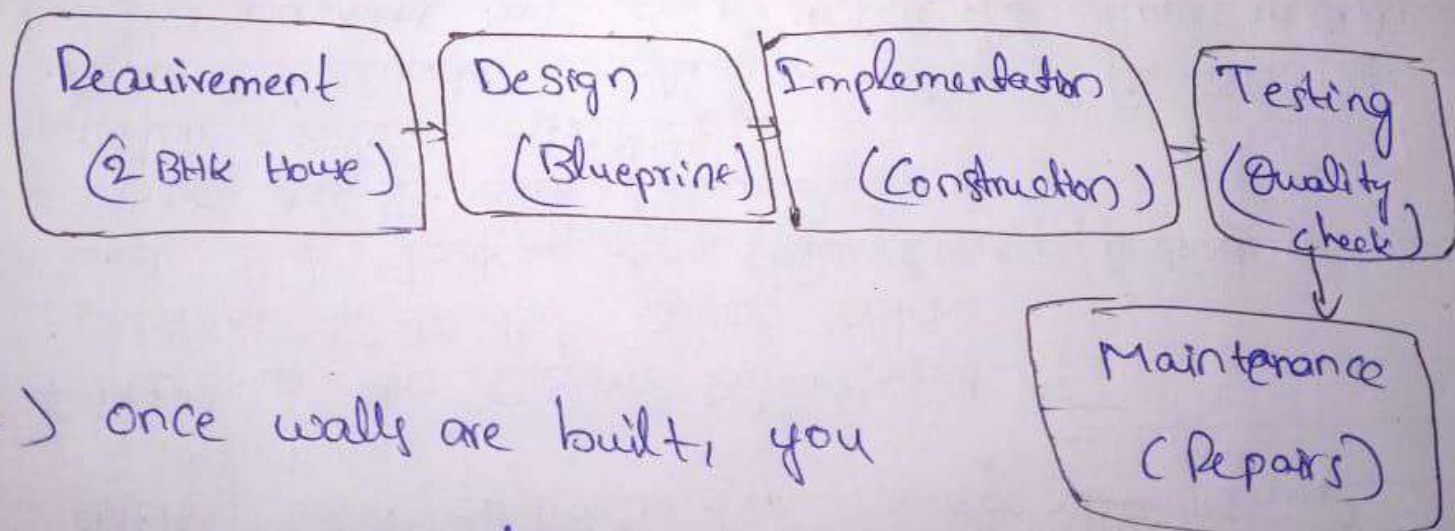
Requirements: login, account details, transfer, transaction history



No frequent changes from the client side.

=> Construction projects (non-Software analogy)

Building a house



=> once walls are built, you

Can't suddenly change the foundation -

Same as waterfall flow.