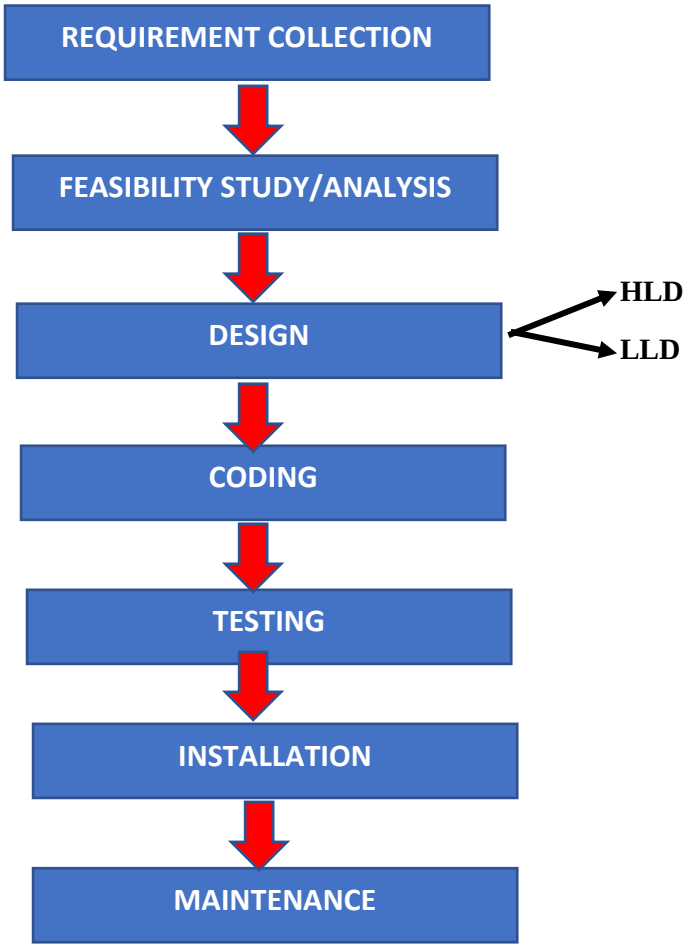
What is waterfall model?

*It is step by step procedure to develop a software.

Stages of waterfall model



1. Requirement collection

- ➔ **It is done by business analyst or product analyst**
- ➔ **B.A goes to customer place and collect the requirement in business language and then convert it to software language**
- ➔ **B.A explains requirement to developers, test engineers, project manager, architect and finance team.**

CRS → customer requirement collection

- **It is a requirement document in the form of business language.**

SRS → software requirement specification

- **It is a requirement document in the form of software language.**

BA → Business analyst

- **Convert CRS to SRS in service-based company**

PA → Product analyst

- **Convert CRS to SRS in product-based company.**

Service based company

they provide service and develop software for other companies, according to their requirement.

Example → Infosys , Wipro, Tcs.

Product based company

they develop their own software and sell it to other companies for profit.

Example → Microsoft, Oracle.

2. FEASIBILITY STUDY

Feasibility study is done by a team consisting of business analyst, project manager, architect, HR and finance team.

Business analyst → Collects requirement from the customer and he will explain the same to the team.

Architect → Checks for the technology support.

- **→ If available what technology should be used,**
- **→ If not, what technology should be adopted.**
- **→ Also suggest which technology to use.**

HR → Checks if resource is available or not to develop the software and to test the software.

Finance team → Checks if the budget is available or not to develop the software.

3. DESIGN

To design we have 2 types

a. **HLD→HIGH LEVEL DESIGN.**
b. **LLD →LOW LEVEL DESIGN.**

High level design→ Designing the architecture of the software is high level design.

Low level design → Designing the smallest units of the software in detail is low level design.

5. TESTING

Testing is done by the test engineer to check the software is working according to customer requirement.

NOTE

- **In waterfall model, developers were only involved in testing.**

WHY DEVELOPERS SHOULD NOT BE INVOLVED IN TESTING?

Or

What are the drawbacks of developers involved in testing?

- ➔ **Developers consume most of the time for developing the software rather than testing and testing will have no time.**
- ➔ **Developers will test the product from the positive point of view and not negative point of view.**
- ➔ **Developers will have over confidence on the software they have built.**
- ➔ **Developers might find the defects while testing but end-up not fixing it.**

6. INSTALLATION

- ➔ **Installation is done at the customer place.**
- ➔ **It is done by installation engineer/IT engineer/Field engineer.**

7. MAINTENANCE

- ➔ **Software is installed in customer place for using in real time.**
- ➔ **If customer finds any defect, the software company fixes it as per the agreement signed.**
- ➔ **If defects are found within warranty period, then they will fix defect for free of cost, else they will charge to fix the defects.**

WHY DO WE CALL IT AS WATERFALL MODEL?

- ➔ **Back tracking is not possible – Means once the requirements are freezed, we cannot change the requirement.**
- ➔ **After coding – we will do testing, while testing if we find any defects, coding can be changed according to requirement but requirement never changes.**

WHY REQUIREMENT KEEPS CHANGING?

- ➔ **Every software is developed to support business and every business change with time.**
- ➔ **Due to competition in the market, updating the software according to the need is necessary**
- ➔ **Adoption of new technologies is also important.**

WHY REQUIREMENT SHOULD BE FREEZED?

- ➔ **As requirement changes, design changes, code will also be changed and it will adds defect.**
- ➔ **The end product will turn into a defect not a product.**

Example

Calculator, Calendar, etc

ADVANTAGES

1.Quality of the software will be good.

2.It is an easy model to adopt.

3. Requirement/design/code doesn't change, so we get a stable product.

DISADVANTAGES

1.Back tracking is not possible

Example—we cannot change the requirement once the design stage is completed means the requirement is freezed, hence this model is not flexible.

2. Requirement is not tested, design is not tested if there is any bug in the requirement, it goes on till the end and lead to lot of rework.

3. it is a traditional model developer were involved in testing.

APPLICATION

1.We go for waterfall model to develop simple application where requirements are fixed.

2. we go for waterfall model to develop short terms products where requirements are fixed.