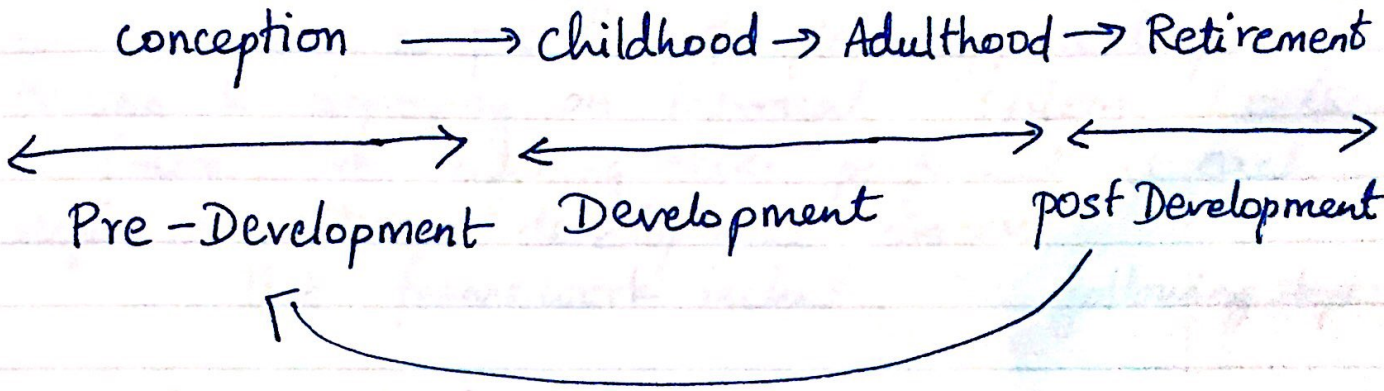
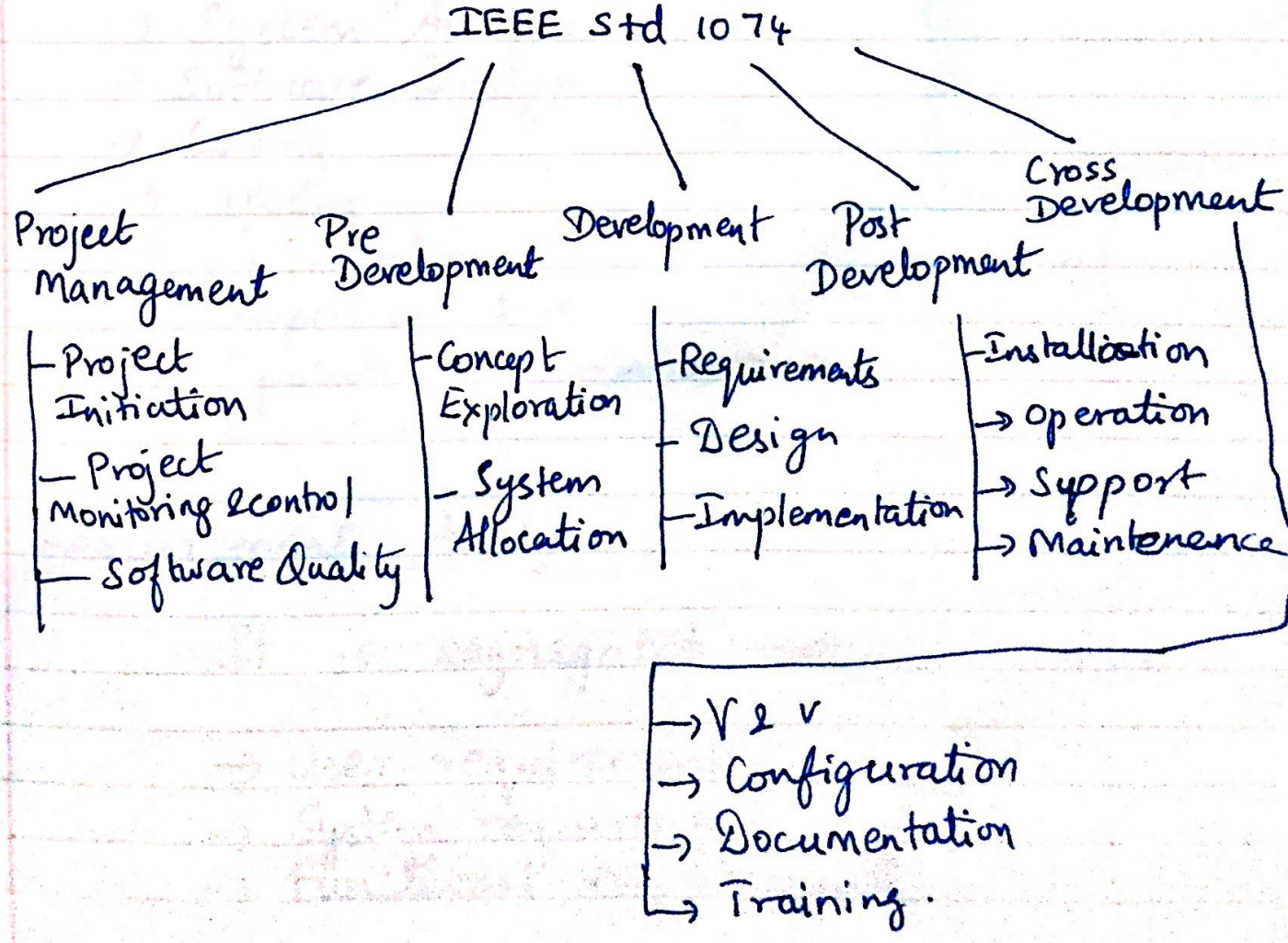
1.) Software Life Cycle:

The term lifecycle is based on metaphor of life of a person.



Software life cycle activities based on IEEE std 1074



Software Development Activities

The software development life cycle also called application development life cycle is term used in systems & software engineering to describe a process of planning, creating, testing & deploying an information system. It is a framework defining tasks performed at each step in software development process.

The framework includes the following steps

→ Communication
→ Requirement Gathering.
→ Feasibility study
→ System Analysis
→ Software Design
→ Coding
→ Testing
→ Integration
→ Implementation
→ Operations & Maintanance
→ Disposition.

Requirement Analysis:

It is segregated into

→ User requirements
→ System requirements
→ Functional requirements

Requirement analysis involves analyzing the problem. The requirement are collected using a number of practices

→ Studying the existing or obsolete system and software.
→ Conducting interviews of users & developers
→ referring to the database or
→ collecting Answers from questions.

System Design :

System Analysis includes understanding of software product limitations, learning system related problems, identifying & addressing impact of project and finding the solution.

Object Design:

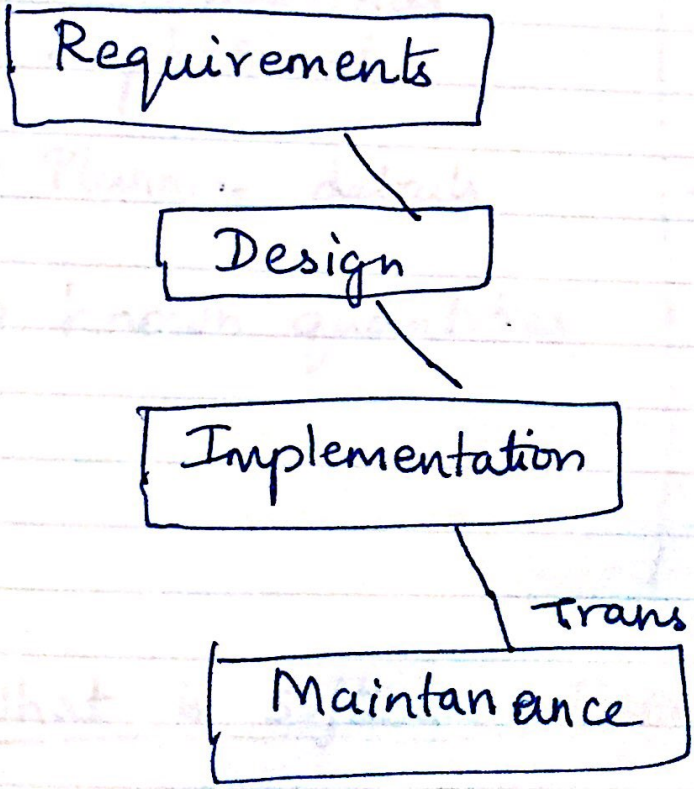
To identify what are the best mechanisms to implement the solution.

Implementation:

How is the solution constructed. How to implement the identified solution model.

2.) Waterfall Software Development:

Waterfall model is a linear sequential Design approach for software development, in which progress flows in one direction downwards (like a waterfall) through the phases of conception, initiation, analysis, design, construction, testing, deployment & maintanence.



* Eloborate up-front activities
* Most of "legacy" systems are still ~~teg~~ largely based on waterfall.

Advantages & Disadvantage of Waterfall mode

Advantages	Disadvantages
→ Thorough requirements definition.	→ Lack of flexibility for change.
→ Design Proven	→ Less oppurtunity for innovation
→ Documentation emphasized.	→ Test Compressed.
→ Planning details	→ Customer only sees result at end
→ Known quantities	→ Developer works from static specificati not with Customer
	→ Time lag between design & results.

3.) **What is software Engineering:**

→ Software Engineering is an engineering discipline concerned with all aspects of SW production starting from early stages of system specification through to the maintan of the system after it has started to be u

* All aspects of software production:
  → not only technical processes.
  → but also deals with project management, development of tools, methods and theories to support SW production.

Importance of Software Engineering:

It is concerned with the practical problems of producing software. SWE is the study and application of engineering to design, development & maintenance of software. Computer science is concerned with theories and methods hence its is essential for SWE.