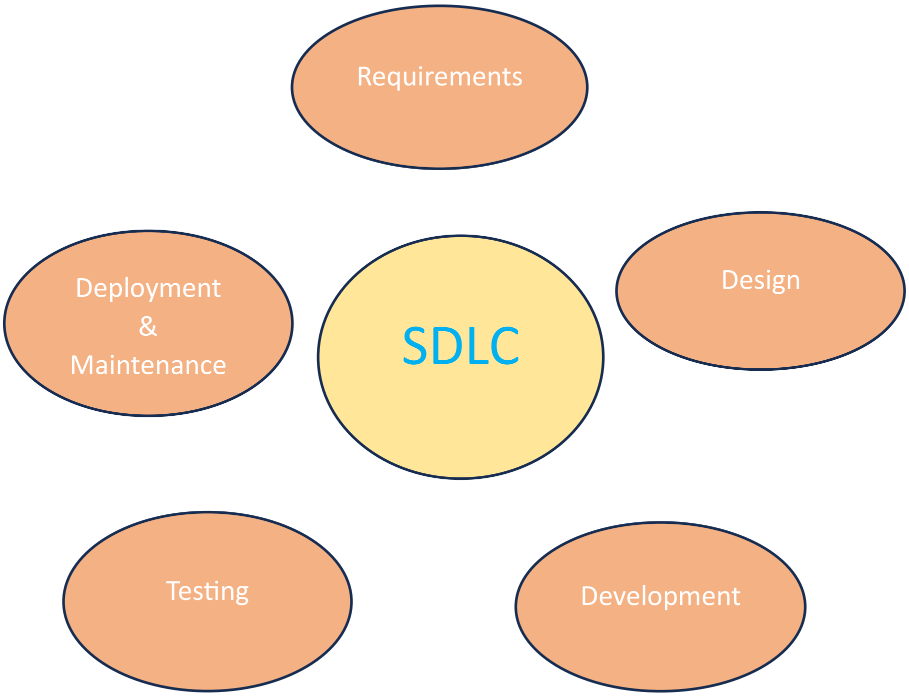
DAY- 2

Assignment 1: SDLC Overview - Create a one-page infographic that outlines the SDLC phases (Requirements, Design, Implementation, Testing, Deployment), highlighting the importance of each phase and how they interconnect.

SOFTWARE DEVELOPMENT LIFE CYCLE (SDLC)



Requirement:- Requirement is the initial step of sdlc that recognized the needs of client. In requirement phase, we gather and analyse the expectation of client.

Design:- In this phase documentation is prepared for implementation according to the requirement that are provided by customer.

Development:- In this phase , developer write code based on the designing document and provide to testing phase .

Testing:- In this phase, tester team test the written code according to customer requirements and also ensure software quality. After testing, it provided to deployment team.

Deployment & Maintenance:- When project get ready ,we have to deploy that project to user and always look for maintenance of project.

Assignment 2: Develop a case study analyzing the implementation of SDLC phases in a real-world engineering project. Evaluate how Requirement Gathering, Design, Implementation, Testing, Deployment, and Maintenance contribute to project outcomes.

SDLC phases in a real-world

1. **Requirement Gathering and Analysis:** Understanding the users needs by conducting surveys and identifying the gaps and opportunities to find the solutions. Documenting functional requirement like remote control, time scheduling, etc and non-functional requirements like saving electricity, scalability.
2. **Design:** Developing a high-level architectural design, including the mobile app, backend server, and IoT device integration. Designing a data models, APIs, and user interfaces of mobile app. Detailed design will help the developers to work on the implementation.
3. **Implementation:** Translation of design into executable code and setting up the development environment should be done. Developing a mobile app using cross platform framework and implementing the backend server using cloud-based infrastructure. At this stage core functionalities are completed.
4. **Testing:** Unit Testing, Integration testing, to be done to ensure that the software is working according to the requirement and it is defect free. If any bugs are found it is to be fixed.
5. **Deployment:** Smooth releasing of app to be done. It should be available for download in play store or app store so that the users can download the app and use it for their convenience.
6. **Maintenance:** Providing the ongoing support to the users, and note down the users feedbacks and rating and accordingly fix them if users are facing any issues by releasing updates. It helps in user satisfaction and improves adoption rate of the mobile app.

Evaluation of SDLC Contributions to Project Outcomes

1. Requirement Gathering and Analysis:

o Essential for defining the project scope and understanding user needs.

o Directly influenced the project's success by ensuring the final product met user expectation

2. Design:

o Provided a clear and structured approach for developers.

o Helped identify potential issues early, reducing costly changes during implementation.

3. Implementation:

o Translating design into code was crucial for realizing the project vision.

o Iterative development and regular reviews ensured high-quality code and adherence to requirements.

4. Testing:

o Critical for ensuring the software was reliable and functional.

o Identified and resolved issues before deployment, enhancing user trust and satisfaction.

5. Deployment:

o A well-planned deployment ensured a smooth transition to the production environment.

o Early user access and feedback were vital for the system's continuous improvement.

6. Maintenance:

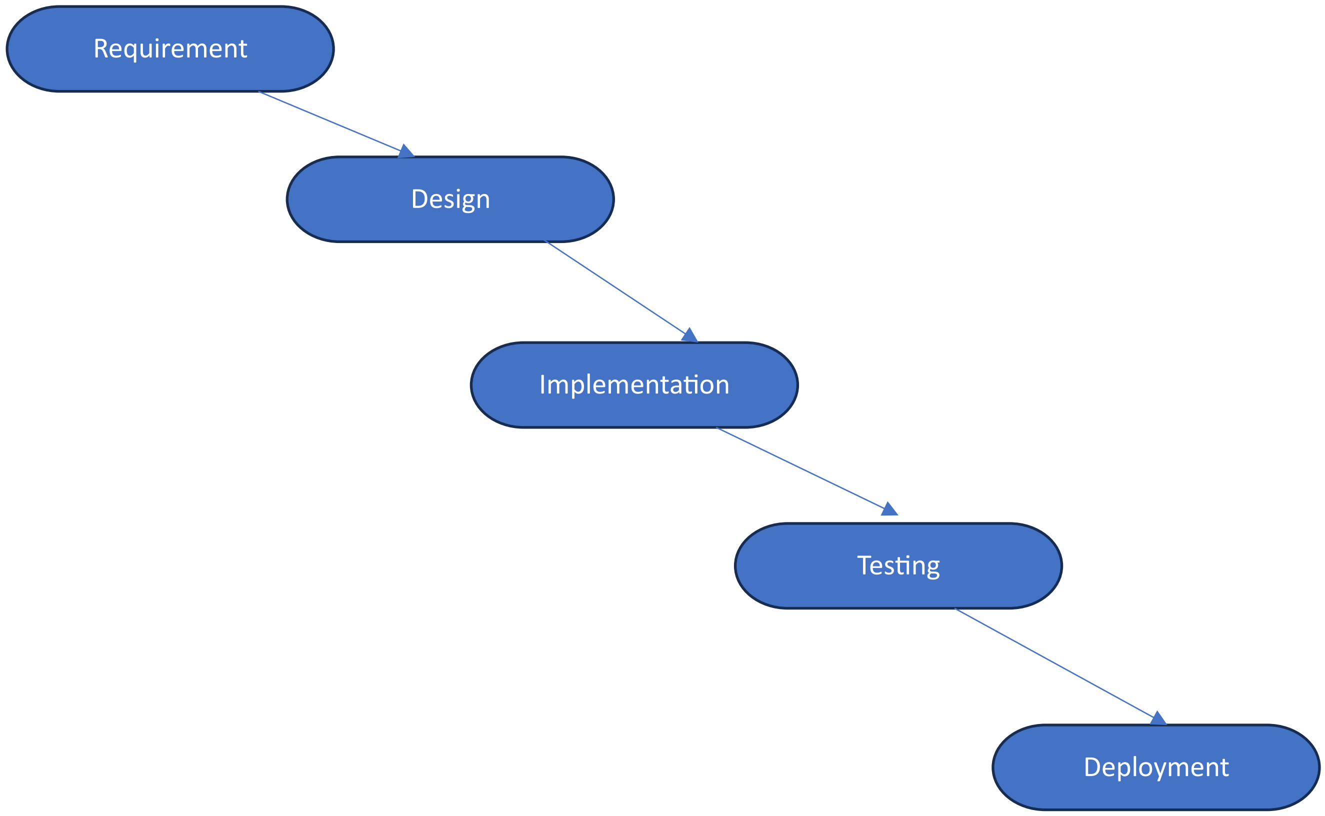
o Ongoing support-maintained system reliability and user satisfaction.

o Regular updates and enhancements kept the software relevant and competitive.

Assignment 3: Research and compare SDLC models suitable for engineering projects. Present findings on Waterfall, Agile, Spiral, and V-Model approaches, emphasizing their advantages, disadvantages, and applicability in different engineering contexts.

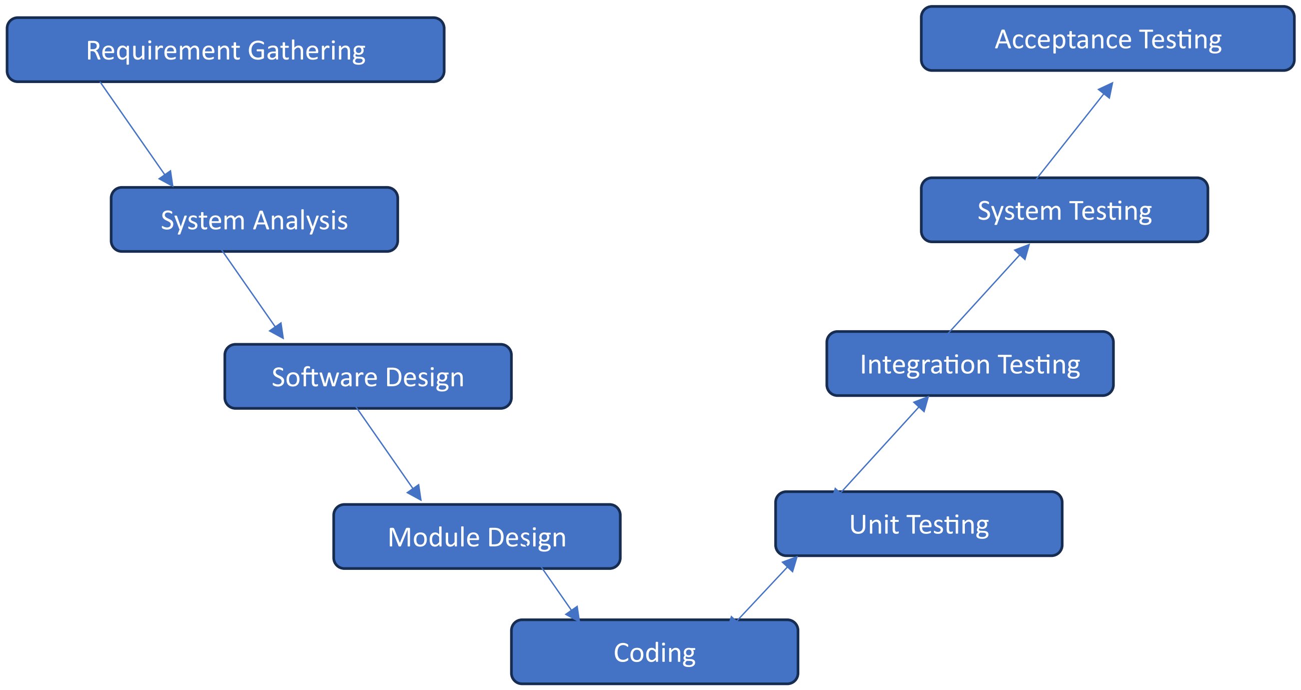
The different SDLC Models for Engineering Projects are as below:

1. **Waterfall Model:** The Waterfall model is a linear and sequential approach where each phase must be completed before moving on to the next. It follows a strict order: Requirements, Design, Implementation, Testing, Deployment, and Maintenance.



2. **Spiral Model:** The Spiral model combines iterative development with systematic aspects of the Waterfall model. It emphasizes risk analysis and allows for repeated refinement through each cycle or spiral.

3. **V-Model:** The V-Model is an extension of the Waterfall model that emphasizes verification and validation. It maps testing phases directly to corresponding development stages.


Requirement Gathering
System Analysis
Software Design
Module Design
Coding
Unit Testing
Integration Testing
System Testing
Acceptance Testing