Assignment -2

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.

Case Study: Election Survey System

Introduction:

This case study analyzes the Software Development Life Cycle(SDLC)phases in the context of developing an Election Survey System(ESS).The Election Survey System(ESS) is designed to collect an analyze voter opinions before elections.

SDLC Phases are:

1. **Requirement Gathering**
2. **Design**
3. **Implementation**
4. **Testing**
5. **Deployment**
6. **Maintenance**

1. Requirement Gathering

Objective: To identify and document the functional and non-functional requirements of the ESS.

Process:

1. **Stakeholder Meetings:** Engaged with election commissions, political parties, and potential users to gather requirements.
2. **Surveys and Questionnaires:** Collected data on user expectations and necessary features.
3. **Requirement Analysis:** Prioritized requirements based on feasibility and importance.

2.Design

Objective: To develop a blueprint for the ESS that meets the specified requirements.

Process:

1. **High-Level Design (HLD):** Defined the system architecture, including the database, server-side components, and user interface.
2. **Low-Level Design (LLD):** Detailed the specific functionalities, module designs, and data flow diagrams.

3.Implementation

Objective: To build the ESS based on the design specifications.

Process:

1. **Module Development:** Coded the individual modules (user management, survey management, analytics, etc.).
2. **Integration:** Combined modules into a cohesive system.
3. **Version Control:** Used Git for source code management to track changes and collaborate efficiently.

4.Testing

Objective: To ensure the ESS is free of defects and meets the specified requirements.

Process:

1. **Unit Testing:** Verified the functionality of individual modules.
2. **Integration Testing:** Ensured that combined modules worked together correctly.
3. **System Testing:** Conducted end-to-end testing of the entire system.
4. **User Acceptance Testing (UAT):** Involved stakeholders in testing to confirm the system met their needs.

5.Deployment

Objective: To make the ESS available to end users.

Process:

1. **Deployment Planning:** Prepared a detailed deployment plan, including rollback procedures.
2. **Environment Setup:** Configured the production environment, ensuring it mirrored the testing environment.

6.Maintenance

Objective: To ensure the ESS remains functional and up-to-date post-deployment.

Process:

1. **Monitoring:** Set up continuous monitoring to detect and address issues promptly.
2. **Bug Fixes and Updates:** Regularly released patches and updates based on user feedback and detected issues.
3. **Performance Optimization:** Made ongoing improvements to enhance system performance and user experience.