**Assignment 2:**

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

**Case Study: Online Banking Application Development**

**1. Requirement Gathering Phase**

Objective:

* Gather requirements from client including bank executives, customers, and regulatory bodies.
* Define functional and non-functional requirements for the online banking application.

Result:

* Detailed requirement specifications document approved by client, including security requirements, transaction limits, user interface expectations, etc.

**2. Design Phase**

Objective:

* Design the architecture of the online banking application.
* Create detailed design specifications for each component (front-end, back-end, database).
* Plan for scalability, security, and integration with existing banking systems.

Result:

* Architectural diagrams, database schema, and interface designs approved by client.
* Detailed design documents for developers and testers.

**3. Implementation Phase**

Objective:

* Develop the online banking application based on approved designs and requirements.
* Code the front-end interfaces, backend logic, and integrate with databases and external services.

Result:

* Completed codebase with modular components.
* Version control system in place for tracking changes.

**4. Testing Phase**

Objective:

* Verify the functionality, performance, security, and usability of the online banking application.
* Conduct unit testing, integration testing, system testing, and user acceptance testing (UAT).

Result:

* Test cases executed with documented results.
* Defects logged, prioritized, and resolved.

**5. Deployment Phase**

Objective:

* Deploy the online banking application to production environments.
* Ensure smooth transition from development to operations.

Result:

* Application deployed with monitoring and backup systems in place.

**6. Maintenance Phase**

Objective:

* Provide ongoing support, bug fixes, and updates to the online banking application.
* Monitor application performance, security vulnerabilities, and user feedback.

Result:

* Regular updates, patches, and enhancements based on user feedback and emerging technology trends.

**Evaluation of SDLC Phases Contribution:**

1. Requirement Gathering and Design:

Creates the foundation for a clear understanding of user needs and a well-defined architecture.

1. Implementation:

Converts design into a functioning application, ensuring it meets specified requirements.

1. Testing:

Ensures quality and reliability by identifying and fixing issues before deployment.

1. Deployment:

Enables the application to go live smoothly and securely.

1. Maintenance:

Ensures ongoing support, updates, and improvements to meet evolving user needs and technological advancements.

**Conclusion:**

The successful implementation of each SDLC phase is critical for achieving project goals and delivering a high-quality online banking application. By following a structured approach from requirement gathering through to maintenance, organizations can mitigate risks, manage resources efficiently, and meet client expectations effectively. Continuous evaluation and improvement of processes within each phase contribute to overall project success and customer satisfaction.