

SDLC ASSIGNMENT – 6

Skill Description:

Gain practical experience in applying Software Development Life Cycle (SDLC) methodologies, including testing execution, incremental development, and Rapid Application Development (RAD). Develop hands-on skills by designing automated testing suites, incrementally enhancing project management tools, and prototyping social media apps with user-centric iterations

Problem Statement 6:

Apply the Incremental model to develop and enhance a project management tool's feature incrementally. Each increment should introduce new project management functionalities. Document challenges faced during each iteration and proposed improvements.

Learning Outcomes:

- Implement the Incremental model in a real-world project scenario.
- Evaluate and propose improvements based on challenges faced during incremental development.

Incremental Development of a Project Management Tool

1. Project Overview

- Objective: Enhance a project management tool incrementally by adding new features with each iteration.
- Development Model: Incremental Development Model.
- Tools & Environment: Java, Spring Boot, React.js, PostgreSQL, and an Agile development setup.

2. Development Increments and Features

Increment 1: Basic Task Management

- Features:
 - Task creation, assignment, and due date tracking.
 - Challenges Faced: Limited UI interactivity.
 - Proposed Improvements: Enhance the task view layout and add filtering options.

Increment 2: Team Collaboration Module

- Features:
 - Team creation, member assignment, and communication board.
 - Challenges Faced: Ensuring real-time updates.
 - Proposed Improvements: Implement WebSocket-based notifications.

Increment 3: Progress Tracking Dashboard

- Features:
 - Visual progress charts and milestone tracking.
 - Challenges Faced: Data visualization complexity.
 - Proposed Improvements: Use third-party libraries like Chart.js for better graphics.

Increment 4: Reporting and Analytics

- Features:
 - Customizable project reports and analytics.
 - Challenges Faced: Managing large data sets efficiently.
 - Proposed Improvements: Optimize database queries and implement caching.

3. Development Process

- Iteration Cycle: Each increment follows planning, design, development, testing, and review phases.
- Testing Approach: Unit testing, integration testing, and user acceptance testing.
- Feedback Loop: Continuous feedback from stakeholders after each increment.

4. Challenges Summary and Key Learnings

- Key Challenges: Balancing feature additions with maintaining system stability.
- Key Learnings:
 - Early user feedback improves usability.
 - Incremental releases reduce project risks.
 - Clear documentation helps manage complex feature sets.

5. Conclusion

By applying the Incremental Development Model, the project management tool was developed systematically, ensuring continuous improvement, manageable workload, and a user-centric approach.