

## **SDLC ASSIGNMENT – 7**

### **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 7:**

Lead the development of a new social media app using the Rapid Application Development (RAD) model. Prototype and release versions with incremental features, emphasizing user engagement and feedback in each iteration to refine the app.

### **Learning Outcomes:**

- Demonstrate the application of RAD and Sliced models in a real-world scenario.
- Assess and refine features based on user feedback during iterative development.

This assignment challenges participants to apply Java Serialization concepts in realistic scenarios, enhancing their ability to address complex requirements in software development.

## **Development of a Social Media App Using the RAD Model**

### **1. Project Overview**

- Objective: Develop a social media app with core features delivered through rapid iterations based on user feedback.
- Development Model: Rapid Application Development (RAD).
- Tools & Environment: Java, Spring Boot, React.js, Firebase, and Agile methodologies.

### **2. Development Phases and Prototypes**

#### **Phase 1: Core Functionality Prototype**

- Features:
  - User registration, login, and profile creation.
  - Challenges Faced: Secure data storage and authentication.

- Proposed Improvements: Use Firebase Authentication and implement password recovery.

## Phase 2: Social Networking Module

- Features:
  - Friend requests, messaging, and activity feed.
  - Challenges Faced: Managing real-time messaging and notifications.
  - Proposed Improvements: Use WebSocket for instant notifications.

## Phase 3: Content Sharing & Engagement

- Features:
  - Photo and video uploads, likes, comments, and shares.
  - Challenges Faced: Handling large media files.
  - Proposed Improvements: Implement cloud storage and media compression.

## Phase 4: Community & Groups

- Features:
  - Group creation, event planning, and admin management tools.
  - Challenges Faced: Managing group permissions and event notifications.
  - Proposed Improvements: Introduce role-based access control.

## 3. Development Process

- Iteration Cycle: Follow iterative development with design, prototype building, user testing, and refinement.
- Testing Approach: Unit testing, integration testing, and user acceptance testing.
- Feedback Loop: Regular user feedback sessions after each release.

## 4. Challenges Summary and Key Learnings

- Key Challenges:
  - Balancing feature delivery speed with performance optimization.
  - Handling real-time data and ensuring data privacy.
- Key Learnings:
  - Early prototyping accelerates feature validation.
  - Frequent updates ensure alignment with user expectations.
  - Scalable architecture reduces technical debt in later phases.

## 5. Conclusion

By applying the Rapid Application Development (RAD) model, the social media app was developed efficiently with continuous feedback and feature enhancements, ensuring a user-centric experience and streamlined development process.