

The Integrated Project Life Cycle Management System using Spring Boot Microservices and Angular.

Abstract

The Integrated Project Life Cycle Management System (IPLMS) is designed to provide an end-to-end digital platform for managing project workflows, documentation, and budget and schedule reporting within an organization. The system adopts a microservices architecture built on Spring Boot. The backend uses MySQL as a reliable and efficient data storage solution, ensuring consistency and high performance in multi-user environments.

On the frontend, a standalone Angular application is developed to deliver an intuitive and responsive user experience. The system supports multi-role-based authentication and authorization.

An authentication interceptor mechanism is implemented to manage session validation and API security seamlessly across all components. The platform also integrates JRXML-based report designs using JasperReports for generating professional, customizable reports on project progress, resource utilization, and performance metrics.

By combining modern backend and frontend technologies, the IPLMS provides a scalable, secure, and maintainable solution to streamline the entire project life cycle—from initiation to closure—enhancing collaboration, transparency, and productivity across departments. To successfully develop and implement this project, students must possess strong proficiency in Object-Oriented Programming (OOP) concepts, Java design patterns, and Spring Boot framework, along with solid knowledge of TypeScript, Angular components, and NgModules for modular and maintainable frontend development.

Students will work on full technology stack of this software and deliver some of the modules related to purchase, stores and and account department.

Academic Project Requirements:

1) Required No. of student(s) for academic project: 2

2) Name of course with branch/discipline: B.E./B.Tech. Computer Engineering/IT/MCA

3) Academic Project duration:

(a) Total academic project duration: 12 Weeks

(b) Student's presence at IPR for academic project work: 5 Full working Days per week

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