

Abstract

Property Insurance Management System

The Property Insurance Management System is a full-stack web application designed to digitize and streamline the complete lifecycle of property insurance operations. The system provides an integrated platform for managing property registration, underwriting, premium calculation, policy issuance, payment processing, claim handling, and settlement in a structured and secure environment.

Traditional property insurance systems often rely on manual processing, fragmented data storage, and limited transparency in premium and claim management. These limitations lead to delayed approvals, inefficient claim settlements, and difficulty in tracking policy status. The proposed system addresses these challenges by implementing an automated, centralized, and role-based property insurance management platform.

The application is developed using ASP.NET Core (.NET 8) Web API for backend services, Angular for frontend development, and SQL Server for relational data management. The system follows a Layered Architecture (Controller → Service → Repository) to ensure maintainability, scalability, and clear separation of concerns. Security is implemented using JWT-based authentication and role-based authorization, supporting multiple user roles including Admin, Agent, Customer, and Claims Officer.

The platform supports multiple property categories such as Residential Property, Commercial Property, Industrial & Special Use, and Property Contents, each with structured subcategories. It enables systematic risk assessment, automated premium calculation based on property value and risk factors, policy lifecycle tracking, and structured claim processing workflows.

By digitizing the end-to-end property insurance process, the system enhances operational efficiency, reduces manual intervention, improves transparency, and ensures secure data handling. The solution is scalable and adaptable for enterprise-level deployment, providing a reliable and structured framework for modern property insurance management.