

The Subscription Management System

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Abstract: *Subscription-based membership systems have become increasingly popular for digital services like Spotify, Prime Video, and YouTube. This project explores the development of a subscription management system using JavaFX, focusing on creating an intuitive user interface and efficient backend integration. The system supports functionalities such as user registration, subscription management, and payment processing, offering a seamless experience for both administrators and users. This study addresses key aspects such as GUI design, security challenges, performance optimization, and integration of RESTful APIs for backend communication. The implementation aims to provide a scalable, secure, and user-friendly solution for managing various subscription models. Additionally, this research compares different subscription models to optimize user engagement and retention. Advanced features like automated billing, personalized recommendations, and analytical insights are integrated to enhance the overall user experience. The study also highlights best practices for integrating third-party payment gateways and managing user data securely. The results demonstrate the system's ability to handle a large user base effectively while maintaining high performance and security standards. Future work will explore the integration of machine learning techniques to predict user preferences and improve personalization further.*

Keywords: JavaFX, Subscription Management, Digital Services, GUI Design, Payment Integration, RESTful APIs, User Experience, Security Challenges, Performance Optimization, Automated Billing, Personalized Recommendations