

Your Paper Title: Concise, Descriptive, Memorable

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Abstract—

Index Terms—Project guidelines, IEEE LaTeX, engineering education, templates

I. INTRODUCTION

The cinema and theater sector increasingly relies on software systems to streamline daily operations such as cataloging films or plays, scheduling showtimes across multiple halls, and ensuring reliable access control for staff and customers. Audiences now expect frictionless digital experiences, while operators need tools that reduce scheduling errors, avoid underutilization of rooms, and keep operational data consistent at scale. Prior research on online ticketing and cinema management has underscored these needs by focusing on seat allocation, registration, and end-to-end booking flows in web and mobile environments [1].

This project presents a Cinema Management Application that automates the core back-office tasks of a cinema or theater complex. The system provides CRUD operations for films or plays (title, genre, duration) and for showtimes in rooms (date, time, hall), enforcing the relationship in which one film can be scheduled in multiple functions. To align with modern engineering practices and to promote separation of concerns, the solution is implemented as two cooperating microservices exposed via REST: a Java-based authentication service backed by MySQL, and a Python-based business service for catalog and scheduling CRUD backed by PostgreSQL or MongoDB. A lightweight web frontend consumes both APIs to support day-to-day administration.

Key challenges addressed in this work include preventing overlapping showtimes within the same hall, preserving data integrity across services and databases, and maintaining a clear audit trail for administrative actions. From an architectural viewpoint, the design emphasizes modularity, well-defined API contracts, and containerized deployment, which facilitates testing, continuous integration, and reproducible execution environments. Functionally, acceptance criteria derived from user stories guide the scope and serve as a basis for automated validation.

In light of earlier efforts on ticketing systems—ranging from web-based platforms for seat allocation to Android applications that simplify the customer journey [1]—our contribution focuses on a concise operator-oriented tool for internal management rather than public e-commerce. The remainder of this report details the requirements captured as user stories

and a story map, the service architecture and APIs, the implementation, and the evaluation strategy.

1 page. Context, challenges, prior work. An example of citation is: Information theory was first formalized by Shannon in 1948 [2].

II. METHODS AND MATERIALS

A. User Stories

1–2 pages. Design choices, architecture diagrams, algorithm pseudocode.

III. RESULTS & DISCUSSION

Tables, Figures, comparisons, statistical charts.

IV. CONCLUSIONS

1-2 paragraphs. Summarize achievements, limitations, future work.

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Optional: funding, collaborators.

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- [2] C. E. Shannon, "A mathematical theory of communication," *Bell System Technical Journal*, vol. 27, no. 3, pp. 379–423, 1948.