

# **CPSC 471 - Database Management Systems**

## **Project Proposal**

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## **Introduction**

The problem is that we have a chain of movie theatres that allow customers to purchase tickets in person but not remotely nor ahead of time, and even if it did it would not be able to track ticket sales or keep track of what movies and showings tickets are purchased for. The solution will be to implement a database that tracks theatre and purchasing information so that the theatre chain can ensure there is enough space in theatres, movies are scheduled properly, and track how much money it is making on ticket sales. Additional functionality will be for returning tickets, personalizing the customers' experience, and tracking employees and their schedules. The following sections in this proposal will be the problem definition, proposed solution, motivation, and conclusion.

## **Problem Definition**

In the past customers were able to purchase tickets in-person at a kiosk or from an attendant at the actual theatre, but now the chain would like to allow users to purchase tickets online and ahead of time so that they can rest easy knowing a ticket for their desired showing is secured. This problem is interesting because implementing our solution could bring in additional revenue from users who do not necessarily like having to physically go to the theatre to buy tickets sight unseen. It will also improve the overall customer experience and allow more precise tracking of ticket sales. And in the era of where information is power the theatre chain will be better able to track customer viewing habits since all their purchases will be tracked through the account they use to purchase tickets. The problem occurs because there is currently no way for users to know if tickets are available without physically making their way to the theatre, and if they do go to the theatre there is a chance they may not get a ticket to their desired showtime or any ticket at all. This particular problem has already been solved since many other theatre chains implement an almost identical solution to this for their ticket purchasing. They do a similar thing where users can navigate to the theatre's website, look for currently playing movies, their showtimes, and then purchase tickets beforehand as long as seats are still available. There are similar systems and solutions to the one we are proposing, actually there is a whole market of software that is exclusively dedicated to providing organizations with the ability to sell tickets before events online. Here are a few links to such solutions:

[Online Movie Ticketing System](#) [1]

[Ticketing Solutions](#) [2]

These services allow a theatre to download the software and set it up as they require, with all the hard work of building the databases and interface already done. But essentially they do the same thing as we are proposing, with the added benefit of allowing the user to also set up the software at self-serve kiosks at the theatre itself. Improvements could include a simpler and more stripped down user interface as some of the products currently available in the market can sometimes make it confusing to purchase tickets online. Another improvement is we could potentially track additional information that might not be kept by other pre-packaged solutions. For example we could keep track of past movies viewed by customers so this information can be used to send targeted ads to customers in hope that they will purchase more tickets and come back to the theatre more often, thus increasing profits. Also if a user creates a profile to

purchase tickets through we can encourage them to share information about themselves, such as their favourite and least favourite movies to personalize their profiles, thus making it appealing for customers to keep visiting and potentially buy more tickets.

## **Proposed Solution**

In this project, we are going to achieve speed and convenience by allowing customers to search through the majority of movies which are currently in theaters, select their favourite one, and then see what theater at which time has that movie available. Then they will be able to easily and quickly purchase a ticket for it. The production of this application will create a service which saves customers' time and increases their movie viewing choices and can bring in more income for the theatre chain.

The project products are:

- *Ticket purchasing*, which the customer will accomplish by first choosing their desired movie and then by selecting the theater, show time, and seat. After that, they pay for the ticket with the final result being they receive the ticket.
- *Canceling tickets* is another service (production) of the application where they can cancel tickets if they change their mind. It will be done in the back end by searching for the ticket using the ticket ID, confirming the cancellation, and then sending a coupon to the customer for a percentage off of their next ticket purchase.
- *Customer subscription service*, where customers can subscribe to the ticket purchasing website by paying an annual fee. Being a subscriber qualifies customers to receive perks such as a newsletter available from the website.
- *Searching movies*, where customers can search for currently playing movies at any of the chain's locations, as well as their showtimes.
- *Account management features* where users can add, edit, and delete account info or something.
- Each theater will have a *specific amount of seats* assigned to it which the customer may choose from and will be attached to a customer's ticket.
- *Administrators account* which allows for the addition and removal of movies and showtime information as time passes and new movies are released and others are phased out. This account also allows for checking ticket purchasing information and profits.
- *Customer account* where a customer can search for movies and purchase tickets. There could be specialized accounts from here, like:
  - ~ *General user* where billing information is not saved.
  - ~ *Account user* where billing information, ticket, and reservation information is saved for easy purchasing and cancellation.
  - ~ *Subscription holder* where all the same information as an account user is saved as well, plus the ability to see new movie premieres before the general public.

## **Motivation**

Our proposed solution will create a convenient experience for customers so that they may see available and upcoming movies at any theatre they choose, which allows for them to plan their night without having to leave the comfort of their homes. With our solution they can check available seating and even reserve specific seats ahead of time which alleviates the stress of getting to the theatres early on a Friday night and/or having to go to the theater earlier in the week to buy tickets for a popular release. What makes our project unique is the ability for a customer to create their own user profile which features their preferences for movies which will make it enticing for them to revisit the site more regularly than just when they wish to purchase tickets. Our project will make it easier for customers to purchase tickets which will hopefully lead to more sales and a rise in revenues. It will also make it easier for management to track ticket sales and track the schedules of both movies and employees.

## **Conclusion**

Our problem was that customers had no way to conveniently purchase tickets without physically going to the theatre so our proposed solution is to allow them to purchase tickets online ahead of time, with all the necessary information being available for them to make an informed choice. We are hoping that with some of the unique features we are hoping to include that allow customers to personalize their ticket purchasing experience will inspire brand loyalty and hopefully translate into increased profits for the theatre chain. We are hoping to have a rough mock-up of what the user interface will look like in the next two weeks. We will have an entity-relationship diagram completed by Feb. 12, a relational model prepared by Feb. 26, and a functional draft of the database and web design prepared by Mar. 12. After this we will then demonstrate our fully functional system on the last week of classes as well as submitting a final report on the last day of classes.

## **References**

- [1] *Online movie ticketing system: Best ticketing system*. ITarian. (2021, August 19). Retrieved January 29, 2023, from <https://www.itarian.com/ticketing-system/online-movie-ticketing-system.php#:~:text=An>
- [2] *See sensible cinema software in action*. Sensible Cinema | Ticketing Software. Retrieved January 29, 2023, from [https://info.gartnerdigitalmarkets.com/sensible-cinema-gdm-lp/?directory=ticketing&utm\\_source=capterra](https://info.gartnerdigitalmarkets.com/sensible-cinema-gdm-lp/?directory=ticketing&utm_source=capterra)