Theater Ticketing System Class:

CS 250:
Software Systems Group Members:
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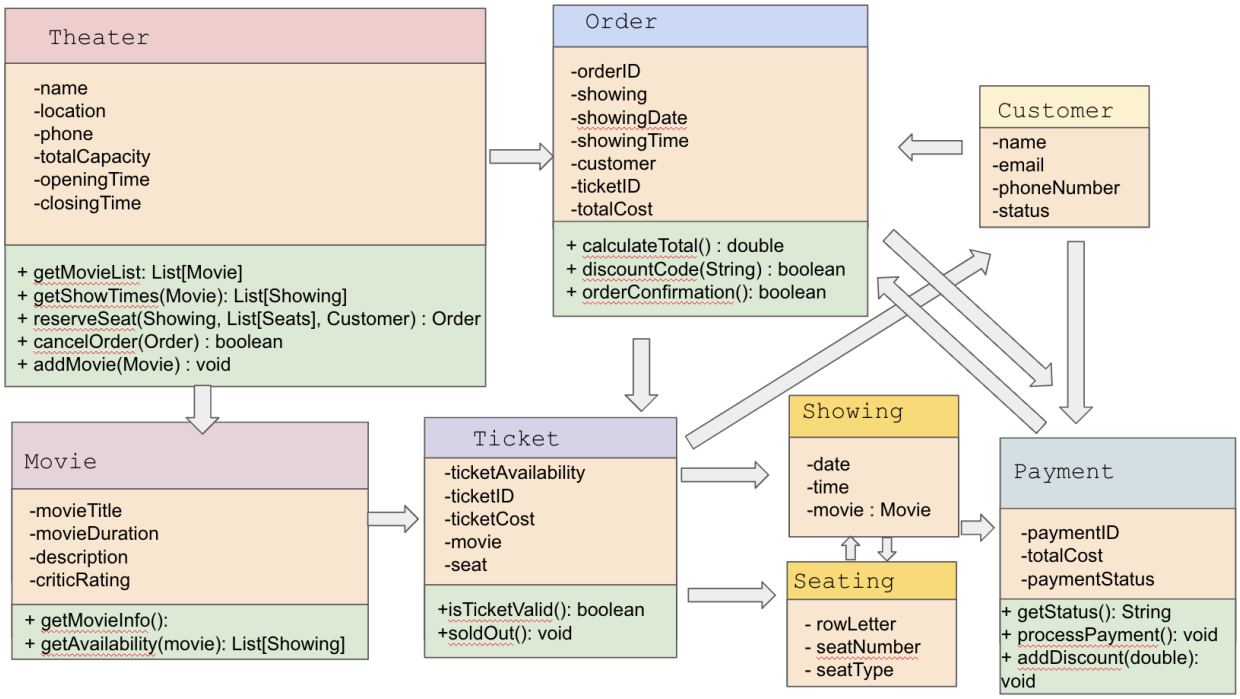
Description: Our theater ticketing system software is designed to automate the process of selling tickets for movies. It includes features such as seat reservations, pricing options, payment processing, and the ability to generate electronic tickets for customers. In addition to this, the software provides movie descriptions, ratings, and availability, along with other details for customers to see when browsing for their particular showing. The system will save customers name, email and phone number as a primary way for them to log back on to the system.



CS250 UML Diagram Relations

The UML Diagram describes classes and how they relate to one another for a ticketing management system which could be used by a movie theater. It includes the following classes:

Theater: has private members which represent all attributes of a movie theater including **name**, **location**, **phone**, **max capacity**, and **closing and opening times**. It has public methods which can retrieve lists of movies and showtimes, as well as one to reserve seats, one to add movies to movie list, and another to cancel reservations made.

Movie: represents a movie and has members unique to each movie, such as, **movieTitle**, **movieDuration**, description, and criticRating. It has 2 public methods (**getMovieInfo()** & **getAvailaibility(movie)**) which are able to fetch information about a movie and check for ticket availability on a movie respectively.

Ticket: holds information pertaining to a ticket with private members such as: **ticketAvailability**, **ticketID**, **ticketCost**, **movie**, and **seat** (of type seating). It has public methods to check if a ticket is available, and confirm whether it is a valid existing ticket.

Order: responsible for storing and managing attributes of an order such as the ticket & information with the private members being: **orderID**, **showing**, **showingDate**, **showingTime**, **customer**, **ticketID**, and **totalCost.** Has 3 public methods capable of calculating your order total, with the optional addition of a discount code, and lastly a boolean returning whether the order was successfully placed and received.

Customer: represents a customer with private members **name**, **phone number**, and **email.**

Showing: represents a specific date and time for a showing of a movie, with private member variables **date**, **time**, and **movie** (of type Movie)

Seating: manages the ordering and purchases of the seats for a given showtime, with private members being **rowLetter**, **seatNumber**, **seatType.**

Payment: responsible for implementing payments for a movie ticket. Has **paymentId**, **totalCost** (before tax), **processPayment, addDiscount,** and **paymentStatus** members to indicate its current state

Class Relations

Theater→ Showing: the theater can have multiple showings of different movies, however since this is only for one theater there cannot be showings for other theaters.

private:
string name
string location
long int phone
int totalCapacity
pair<int,int> openingTime
pair<int,int> closingTime

public:
getMovieList returns List
getShowTimes returns pair from a List
reserveSeat is void
cancelOrder is void
addMovie is void

Movie→Tickets: Each ticket is for a specific movie and there can be multiple, however there will never be movies playing at the theater with no tickets available (under normal circumstances).

private:
string movieTitle
pair<int,int> movieDuration
string description
double criticRating

public:
getMovieInfo returns formatted information given in variables
getAvailability searches for movie in showing list

Showing→ Seating: Each showing will have a specific number of seats available for purchase.

private:
int date
pair<int, int> time
movie Movie

Tickets→ Showing & Seating: Each ticket corresponds to a specific showtime and specific seats which are reserved.

private:
boolean ticketAvailability
long int ticketID
double ticketCost
string movie
string seat

public:
isTicketValid returns ticketAvailability
soldOut returns void

Order→Tickets: An order will always contain tickets, and can contain multiple.

Order:
private: long int orderID
Showing showing
int showingDate
pair<int,int> showingTime
Customer customer

int ticketID
double totalCost

public:
calculateTotal returns totalCost
discountCode returns boolean for confirmation
orderConfirmation returns boolean for confirmation

Order→Customer: Each order has one customer

Customer→Order→Payment: Customer can place an order for tickets which will then require payment which is also associated with each order (every order requires payment)

private:
string name
string email
long int phoneNumber

Payment→Order: Each payment is for a specific order; don't want to accidentally purchase someone else's movie tickets with their seats and showtime.

Payment:
private:
long int paymentID
double totalCost
boolean paymentStatus

public:
getStatus returns paymentStatus
processPayment returns void
addDiscount returns void

Seating:
private:
char rowLetter
int seatNumber
string seatType

Movie Theatre Ticketing Timeline

Team Members:
Andrew, William, Gabe, John

Description:
Our theater ticketing system software is designed to automate the process of selling tickets for movies. It includes features such as seat reservations, pricing options, payment processing, and the ability to generate electronic tickets for customers. In addition to this, the software provides movie descriptions, ratings, and availability, along with other details for customers to see when browsing for their particular showing. The system will save customers name, email and phone number as a primary way for them to log back on to the system.

Code:
Theater Class: Andrew
Movie Class: John
Ticket Class: William
Order Class: Gabe
Showing & Seating Class: Andrew and William
Customer Class: Gabe and John
Payment Class: John

Misc. Tasks:
Arithmetic Logic Planning: John and William
Abstract Logic Planning: Andrew Gabe
Quality Checking: John
Logic Checking: John
Graphics: Gabe and William

Prototype goal: March 20th

Testing:
Theater Class Testing: Andrew
Movie Class Testing: John
Ticket Class Testing: William
Order Class Testing: Gabe
Showing & Seating Testing: Class: Andrew and William
Customer Class Testing: Gabe and John

Payment Class Testing: John

Testing finish goal: a week before project due date