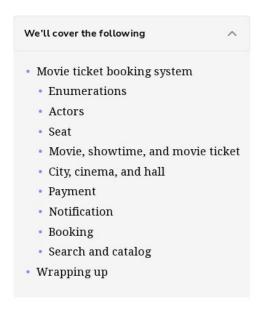
Code for the Movie Ticket Booking System

Write the object-oriented code to implement the design of the movie ticket booking problem.



We've gone over different aspects of the movie ticket booking system and observed the attributes attached to the problem using various UML diagrams. Let's explore the more practical side of things, where we will work on implementing the movie ticket booking system using multiple languages. This is usually the last step in an object-oriented design interview process.

We have chosen the following languages to write the skeleton code of the different classes present in the movie ticket booking system:

- Java
- C#
- Python
- C++
- JavaScript

Movie ticket booking system

In this section, we will provide the skeleton code of the classes designed in the class diagram lesson.

Note: For simplicity, we are not defining getter and setter functions. The reader can assume that all class attributes are private and accessed through their respective public getter methods and modified only through their public method functions.

Enumerations

The following code provides the definition of the various enumerations used in the movie ticket booking system:

Note: JavaScript does not support enumerations, so we will be using the <code>Object.freeze()</code> method as an alternative that freezes an object and prevents further modifications.



Enum definitions

Actors

This section contains the different people that will interact with our movie ticket systems, such as a Customer, Admins, and TicketAgents. All of these classes will inherit the properties of the Person class. The definition of these classes is given below:

Actors involved in the movie ticket booking system

Seat

The Seat will be an abstract class, which serves as a parent for three different types of seats: Platinum, Gold, and Silver. The definition of the Seat and its child classes is given below:

```
// Member functions
isAvailable() { }
setSeat() { }
setRate() { }

class Platinum extends Seat {

#rate;

constructor(seatNo, status, rate) {
    this.#rate = rate;
    super(seatNo, status);
}

actSeat() {

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```

Seat and its derived classes

Movie, showtime, and movie ticket

Next, we will explore the ShowTime, Movie, and MovieTicket classes that provide the details of the movie to the customer. The definition of these classes is given below:

```
1 class Movie {
2  #title;
3  #genre;
4  #release_date;
5  #language;
6  #duration;
7
8  // Data members
9  constructor(title, genre, language, release_date, duration) {
10  this.#title = title;
11  this.#genre = genre;
12  // release_date attribute represent date and time
13  this.#language = language;
14  this.#language = language;
15  this.#duration = duration;
16  this.#shows = []; // List of shows
17  }
18  }
19
20  class ShowTime {
21  #showId;
22  #startTime;
23  #date;
24  #duration;
25  // Data members
26  constructor(showId, startTime, date, duration) {
27   this.#showId = showId;
28   this.#showId = showId;
29   // startTime and date attributes represent date and time
29   this.#startTime = startTime;
20   this.#startTime = startTime;
21   this.#startTime = startTime;
22   this.#startTime = startTime;
23   this.#startTime = startTime;
```

The Movie, ShowTime, and MovieTicket classes

City, cinema, and hall

This section contains classes like Hall, Cinema, and City that make up the infrastructure of our movie ticket system. The definition of these classes is given below:

```
1 class City {
2     #name;
3     #state;
4     #ZipCode;
5     #cinemas;
6
7     // Data members
8     constructor(name, state, zipCode) {
9          this.#state = state;
10          this.#zipCode = zipCode;
11          this.#zipCode = zipCode;
12          this.#cinemas = new Array(); // List of cinemas
13     }
14     }
15
16     class Cinema {
17          #cinemaId;
18          #city;
19
20          // Data members
```

```
constructor(cinemald, city) {
    this.#cinemald = cinemald;
    this.#city = city; // Refers to an instance of the City class
    this.#halls = new Array(); // List of halls
}

class Hall {
    #hallD;
}
```

City, cinema and hall classes

Payment

The Payment class is another abstract class, with the Cash and CreditCard classes as its child. This takes the PaymentStatus enum to keep track of the payment status. The definition of this class is given below:

Payment class and its child classes

Notification

The Notification class is an abstract class that is responsible for sending notifications via email or phone/SMS after actions performed by either the admin and/or customer. Its definition is given below:

```
27 }
28
29 class PhoneNotification extends Notification {
30  // person here refers to an instance of the Person class
```

Notification class and its child classes

Booking

The Booking class is the main class of our movie ticket booking system and will display the information relating to a particular customer's booking. The definition of this class is given below:

```
1  class Booking {
2     #bookingId;
3     #amount;
4     #totalSeats;
5     #createdOn;
6     #isBooked;
7     #payment;
8     #show;
9
// Data members
constructor(bookingId, amount, totalSeats, createdOn, status, payment, show) {
1this.#bookingId = bookingId;
1this.#createdOn = createdOn;
1this.#createdOn = createdOn;
1this.#status = status; // BookingStatus enum
1/ Instances of classes
15     this.#status = status; // BookingStatus enum
1/ Instances of classes
1/     this.#show = show;
1/     this.#show = show;
1/     this.#show = show;
1/     this.#seats = new Array(); // List of movie tickets
1/     this.#seats = new Array(); // List of seats
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1/     t
```

The Booking class

Search and catalog

The Catalog class contains the movie information and implements the Search interface class to enable the search functionality based on the given criteria (title, language, genre, and release date). The definition of these two classes is given below:

Wrapping up

We've explored the complete design of a movie ticket booking system in this chapter. We've looked at how a basic movie ticket booking system can be visualized using various UML diagrams and designed using object-oriented principles and design patterns.

