

# CSC309 PP1 - Database Model Design

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## User Model

A model to represent a user of the FlyNext application.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
firstName	String	A string of the user's first name	
lastName	String	A string of the user's last name	
email	String	A string of the user's email	
password	String	A string of the user's encrypted password	
phone	String?	A string of the user's phone number or undefined	
role	String	A string of the user's role which must either be "ADMIN" for hotel owners or "USER" for users	
profilePic	String?	A string of the url to the user's profile picture or undefined	
bookings	Booking[]	An array of Booking models that represents this user's bookings.	References Booking models
notifications	Notification[]	An array of the user's notifications	References Notification models
hotelOwner	HotelOwner?	The user's hotelOwner model if they are a hotel owner.	References hotelOwner model
hotelBookings	HotelBooking[]	An array of the user's hotel bookings.	References hotelBooking models
flightBookings	FlightBooking[]	An array of the user's flight bookings.	References flightBooking models

## Itinerary Model

A model to represent a user's itinerary.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
flights	FlightBooking[]	An array of hotel bookings that are part of this itinerary	Array of FlightBooking objects
hotels	HotelBooking[]	An array of flight bookings that are part of this itinerary	Array of HotelBooking objects
bookingId	String?	Id of booking which itinerary is associated with	
booking	Booking?	The actual booking object with id = bookingId	References booking objects id; Cascade Deletes
status	String	The current status	

## Booking Model

A model to represent a user's booking, which contains the nested itinerary object, which has the nested flightBooking and hotelBooking objects.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
itinerary	Itinerary?	The itinerary associated with this booking	Itinerary object; Set optional so that booking and itinerary can be linked after created individually
userId	String	Id of user who placed this booking	
user	User	The actual user object with id = userId	References user
bookingDate	DateTime	Date booked	
status	String	The current status	

# FlightBooking Model

A model to represent a user's flightBooking.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
flightId	String	Self-explanatory	
flightNumber	String	Self-explanatory	
departureTime	String	Self-explanatory	
originCode	String	Self-explanatory	
originName	String	Self-explanatory	
originCity	String	Self-explanatory	
originCountry	String	Self-explanatory	
arrivalTime	String	Self-explanatory	
destinationCode	String	Self-explanatory	
destinationName	String	Self-explanatory	
destinationCity	String	Self-explanatory	
destinationCountry	String	Self-explanatory	
duration	Int	Self-explanatory	
price	Int	Self-explanatory	
currency	String	Self-explanatory	
availableSeats	Int	Self-explanatory	
status	String	Self-explanatory	
airlineName	String	Self-explanatory	
itineraryId	String?	Id of itinerary that this flightBooking is associated with	
itinerary	Itinerary?	Itinerary object with id = itineraryId	Itinerary object; Set optional so that flightBooking and itinerary can be linked after created individually

userId	String	Id of user who placed this booking	
user	User	The actual user object with id = userId	References user
passportNumber	String		
email	String		

## City Model

A model to represent a city from the AFS database.

Fields	Type	Description	Relationships
<u>id</u>	Int	Primary Key	
city	String	Name of the city	
country	String	Country where the city is located in	

## Airport Model

A model to represent an airport from the AFS database.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
name	String	Name of the airport	
code	String	Airport code	
city	String	City where airport resides	
country	String	Country where airport resides	

## HotelOwner Model

A model to represent a user that owns one or more hotels.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
userId	String	The ID of the user account associated with this hotel owner	References the id field in the User model
hotels	Hotel[]	List of hotels owned by this hotel owner.	One-to-many relationship with the Hotel model
user	User	The user account associated with this hotel owner.	Many-to-one relationship with the User model through the userId field

## Hotel Model

A model to represent a hotel.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	Used as foreign key in Room and HotelBooking models
name	String	Name of the hotel	
logo	String?	Optional URL to hotel's logo image	
address	String	Physical address of the hotel	
location	String	City/area location of the hotel	
starRating	Int	Hotel rating (1-5 stars)	
images	Json	Json containing array of image URLs/data for the hotel	

ownerId	String	Foreign key to HotelOwner	
owner	HotelOwner	Relation to hotel owner	One-to-many with HotelOwner model
rooms	Room[]	Collection of rooms in the hotel	One-to-many with Room model
hotelBookings	HotelBooking[]	Collection of bookings for the hotel	One-to-many with HotelBooking model

## Room Model

A model to represent a hotel room.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
type	String	Type/category of room (e.g., "Single", "Double", "Suite")	
amenities	Json	JSON object containing room amenities (e.g., WiFi, TV)	
pricePerNight	Float	Cost per night for the room	
images	Json	JSON object containing URLs or paths to room images	
hotelId	String	Foreign key linking to the Hotel model	References the id field in the Hotel model
available	String	Indicates if the room is available for booking. Defaults to true	
hotel	String	The hotel this room belongs to	Many-to-one relationship with Hotel model through hotelId
hotelBookings	HotelBooking[]	List of bookings made for this room	One-to-many relationship with HotelBooking model

# HotelBooking Model

A model to represent a hotel room booking.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
hotelId	String	Foreign key linking to the Hotel model	References id in Hotel model
hotel	Hotel	The hotel associated with this booking	Many-to-one with Hotel model
roomId	String	Foreign key linking to the Room model	References id in Room model
room	Room	The specific room being booked	Many-to-one with Room model
userId	String	Foreign key linking to the User model	References id in User model
user	User	The user who made the booking	Many-to-one with User model
bookingDate	DateTime	Timestamp when booking was made. Auto-set to current time.	
checkInDate	DateTime	Date when guest will check in	
checkOutDate	DateTime	Date when guest will check out	
status	String	Current status of the booking (e.g., "CONFIRMED", "CANCELLED")	
itineraryId	String?	Optional foreign key to Itinerary model	Optional reference to id in Itinerary model
itinerary	Itinerary?	The itinerary this booking belongs to, if any	Optional many-to-one with Itinerary model

## Notification Model

A model to represent a notification.

Fields	Type	Description	Relationships
<u>id</u>	String	Primary Key	
userId	String	Foreign key linking to the User model who will receive the notification	References id in User model
message	String	The actual notification message content	
read	Boolean	Flag indicating if the notification has been read. Defaults to false.	
createdAt	DateTime	Timestamp when notification was created. Auto-set to current time.	
user	User	The user who receives this notification	Many-to-one with User model