

MYSQL Airlines

GROUP 5 - Module 1 Submission

Introduction

The objective of a database management system is to facilitate the creation of data structures and relieve the programmer of the problems of setting up complicated files. MySQL Airlines is a new and upcoming airline company that wants to dominate the industry in the near future and take care of its customers by providing safe and affordable flights. Every airline has different needs and wants, and not just any database system would adequately serve everyone, especially for a new airline company that is getting itself situated in this industry.

For a new airline company this database system will include maintaining and operating the airline's reservation system and passenger name records. The system holds your name and personal information and it's where your flight reservations are kept. This database system will enable us to track and strengthen customer value after the point of purchase.

Creating a detailed database of our customers will help us to improve brand credibility, increase our customer lifetime value, retain existing customers, make travels safe during covid and to make our airline more profitable by marketing to target customer groups and offer them loyalty programs. Loyalty programs have proven themselves as one of the most effective tactics for increasing revenue and inspiring customer loyalty. An airline's loyalty program can help in reaching new audiences and converting them into potential long term customers. Airlines depend on a good database system because without them an airline is unable to operate at its best - if at all. If a system fails to work properly, tracking everything temporarily with paper during computer down time would be practically impossible. This database system that we have created for MySQL Airlines will in the end keep them on track.

Entities, fields, data types. (Including Primary and Foreign Keys.)

ALYSSA/EMMANUEL 25-40

<u>ENTITY</u>	<u>FIELDS</u>	<u>DATA TYPES</u>	<u>PRIMARY KEY</u>	<u>FOREIGN KEY</u>
CUSTOMER	Customer_id	Int	✓	
	Customer_firstname	VARCHAR(20)		✓
	Customer_lastname	VARCHAR(35)		
	Booking_Id	Int		✓
	Date_ofTravel	VARCHAR(8)		
	Roundtrip_or_oneway	VARCHAR(4)		
	Rewards_id	Int		✓
	Flight_Id	Int		✓

MICHAEL 20-25

<u>ENTITY</u>	<u>FIELDS</u>	<u>DATA TYPES</u>	<u>PRIMARY KEY</u>	<u>FOREIGN KEY</u>
FLIGHT	Flight_id	Int	✓	
	Aircraft_type	VARCHAR(15)		
	Occupied_seats	Int		
	Unoccupied_seats	Int		
	Staff_onboard	Int		
	CovidExams	Int		
	DirectFlight	Varchar(4)		
	Departure_airport	VARCHAR(30)		
	Arriving_airport	VARCHAR(30)		

Alyssa- 25-30 rows

<u>ENTITY</u>	<u>FIELDS</u>	<u>DATA TYPES</u>	<u>PRIMAR Y KEY</u>	<u>FOREIGN KEY</u>
CUSTOMER_PROFILE	Customer_firstname	VARCHAR(20)	✓	
	Customer_lastname	VARCHAR(35)		
	Phone	Int		
	Passport number	Int		
	Address	VARCHAR(75)		
	Email	VARCHAR(75)		
	Customer_id	Int		✓

LINOR -20-25

<u>ENTITY</u>	<u>FIELDS</u>	<u>DATA TYPES</u>	<u>PRIMARY KEY</u>	<u>FOREIGN KEY</u>
BOOKING	Booking_Id	Int	✓	
	Seat number	VARCHAR(5)		
	Customer_id	Int		✓
	Cost_of_ticket	Int		
	Rewards_id	Int		✓

VIRAL/Raj- 5-15

<u>ENTITY</u>	<u>FIELDS</u>	<u>DATA TYPES</u>	<u>PRIMARY KEY</u>	<u>FOREIGN KEY</u>
REWARDS	Rewards_id	Int	✓	
	Earned_Rewards	Int		
	Unearned_rewards	Int		
	RewardCategory_id	Int		✓
	Customer_id	Int		✓

VIRAL/Raj -3

<u>ENTITY</u>	<u>FIELDS</u>	<u>DATA TYPES</u>	<u>PRIMARY KEY</u>	<u>FOREIGN KEY</u>
REWARDS_CATEGORY	Rewardscategory_id	Int	✓	
<u>Gold</u> <u>Silver</u> <u>Bronze</u>	Membership_Status	Var_char(8)		

Referential Integrity Constraints

- Customer_id in CUSTOMER_PROFILE must exist in Customer_id in CUSTOMER
- Flight_id in CUSTOMER must exist in Flight_id in FLIGHT
- Booking_id in CUSTOMER must exist in Booking_id in BOOKING
- Customer_fname in CUSTOMER must exist in Customer_fname in CUSTOMER_PROFILE
- Rewards_id in CUSTOMER must exist in Rewards_id in REWARDS
- Rewards_id in BOOKING must exist in Rewards_id in REWARDS

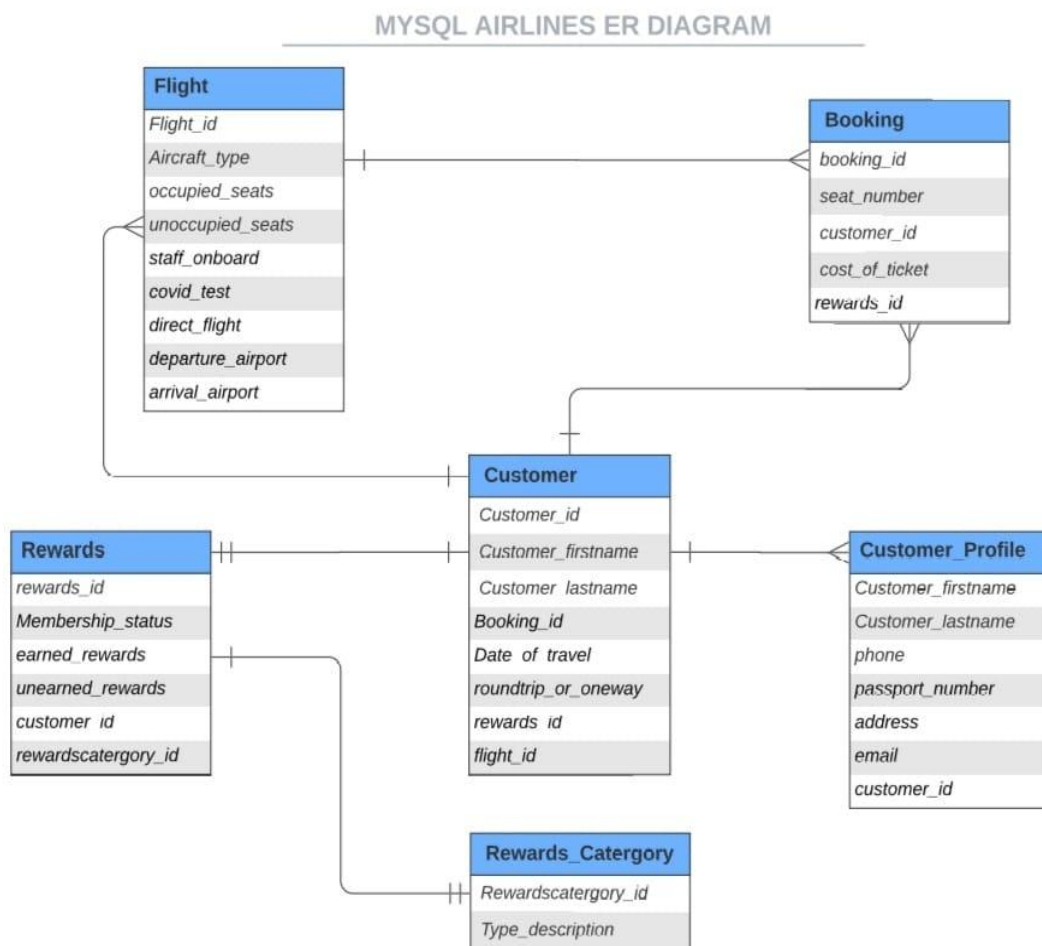
- RewardsCategory_id in REWARDS must exist in RewardsCategory_id in REWARDS_CATEGORY

Relations

1. Entity CUSTOMER has a one to many relationship with entity FLIGHT and BOOKING as one CUSTOMER can have many flights scheduled and multiple bookings for the same
2. Entity CUSTOMER has a one to one relationship with entity REWARDS and CUSTOMER_PROFILE as each customer will have a specific individual reward program and only a single customer profile
3. Entity FLIGHT has one to many relationship with the CUSTOMER and BOOKINGS entities as each flight can have more than one customer on it with different bookings
4. Entity CUSTOMER_PROFILE will have a one to one relationship with the CUSTOMER entity defining the details of the customer
5. Entity BOOKING will have a many to one relationship with the CUSTOMER AND FLIGHT entities as there will be multiple bookings of flights made by multiple customers
6. Entity REWARDS will have a one to one relationship with CUSTOMER entity giving details about the customers progress in the airlines rewards program
7. Entity REWARDS_CATEGORY will have a one to one relationship with entity REWARDS as it will define a single category of rewards level achieved by the customer

Explain if a primary key can have null values in other tables?

ER Diagram



<u>Customer ID</u>	<u>Passport Number</u>
<u>121256</u>	<u>340007237</u>
<u>112587</u>	<u>527682197</u>
<u>060586</u>	<u>435106556</u>
<u>020787</u>	<u>340063237</u>
<u>082507</u>	<u>528782197</u>
<u>090805</u>	<u>435341256</u>
<u>092887</u>	<u>340007237</u>
<u>032701</u>	<u>528782197</u>
<u>091276</u>	<u>435223556</u>
<u>013184</u>	<u>340007237</u>
<u>023890</u>	<u>528782197</u>
<u>060228</u>	<u>435106556</u>
<u>103072</u>	<u>528451973</u>
<u>060564</u>	<u>435106556</u>
<u>032401</u>	<u>340009237</u>

<u>060264</u>	<u>528782197</u>
<u>090905</u>	<u>435123455</u>
<u>020987</u>	<u>528782197</u>
<u>110587</u>	<u>435164356</u>
<u>060229</u>	<u>340007237</u>
<u>082407</u>	<u>528782197</u>
<u>013173</u>	<u>435645569</u>
<u>060589</u>	<u>340876237</u>
<u>060529</u>	<u>528764975</u>
<u>060664</u>	<u>435106556</u>
<u>021890</u>	<u>528765197</u>
<u>103172</u>	<u>435654556</u>
<u>121246</u>	<u>340877237</u>
<u>091005</u>	<u>528782197</u>
<u>032775</u>	<u>435755562</u>
<u>032746</u>	<u>435984556</u>
<u>110587</u>	<u>526782197</u>

