

Project Step 6 - Royal Cruise Line

URL: <http://flip1.engr.oregonstate.edu:56000/>

Executive Summary:

In the initial stage of our project, we have to draft our database outline and ER diagram. We corrected the naming inconsistencies of our entities and attributes, such as the capitalizations and the pluralities, based on the peer reviews. We were also advised to revise the relationship cardinality between entities by the TA, however, we decided not to make any changes because we reviewed the course material and felt that the current version was correct.

On the second step of the project, we have to update the our first draft, create the Schema, and write the data definition queries and sample data. We have to draw up a new ER diagram of the entity relationships because we realized that the original ER diagram was actually the Schema. We also made changes to our entities, such as changing 'age' to 'dob' under Passengers, changing the datatype of specialNeeds from CHAR to BOOLEAN under Cabins, adding an attribute 'description' under MealPlans, and adding 'startDate' under Trips. The foreign keys under Trips were not nullable because all of these keys were essential information for creating a trip. The foreign key, 'passengerID', under TripHistories was nullable because if a passenger is deleted, all trips will be disassociated with the passenger in TripHistory but the TripHistory will still exist as proof that someone(s) went on that trip before. We added the necessary cascade operations that were missing from our tables and also fixed any remaining naming inconsistencies that slipped our attention during revision of the first step.

On the third step of the project, we have to write the data manipulation queries for selecting, inserting, updating and deleting entries to the tables. Here, the peer reviewers pointed out a key issue that our database and website should be for administrator usage, not client usage, so we have to make the necessary revisions to shift our database's focus. We were advised again by the TA to edit the relationship cardinalities between entities because some of the relationships were reversed, and took action to do that. We changed the foreign keys under Trips from IDs to names because it makes sense to show values as names instead of numbers when displaying on a table, but this idea was latter discarded.

On the fourth step of the project, we have to code the CRUD functions for one of our entities, Cabins. After peer testing, we fixed the problem with inputting values for 'specialNeeds'. The delete function wasn't working properly and we managed to fix it partially, but there was issues with deleting entries from a table when there was only one entry left. A navigation bar was added on top of the website for better access to all pages when not on home page.

On the fifth step of the project, we have to implement CRUD functions for at least two-thirds the remaining entities. We coded for Passengers, CruiseShips, and MealPlans, leaving Trips and TripHistories for the next step because they involve foreign keys. We have problems with inputting values for 'phoneNumber' under Passengers and were able to fix that but changing the datatype from INT to VARCHAR based on the advice from a peer reviewer.

On the final step of the project, we implemented CRUD functions for the remaining two entities, Trip and TripHistories. Unfortunately, we were unable to resolve the issue with the deletion of the last entry on the any of the entity tables.

Updated Database Outline & Entity Table Assignments

Overview:

The Royal Cruise Line is a popular choice for people planning to take a cruise trip for vacation. It offers trips departing from dozens of ports with destinations to many different countries. The company has 6 **CruiseShips**, each being able to carry 700 **Passengers**, which are estimated to make 100 **Trips** per year. The cruise line wants to create a database that will keep track of all the **Passengers**, and the past and future **Trips**. It's expected to handle the recording of roughly 2000 **Trips** in total. This database will record the **Passengers**' personal information, the **Cabins** they've stayed in, the **MealPlans** they've chosen, and the **CruiseShips** they've taken.

Database Outline:

1. **Passengers** - record Passengers' personal information

- o passengerID - INT(11), PK, AI, NN
- o firstName - VARCHAR (100) NN
- o lastName - VARCHAR (100) NN
- o gender - CHAR(1) NN
- o dob - DATE NN
- o email - VARCHAR(100) NN
- o phoneNumber - VARCHAR(15) NN

Relationships:

- o **1:M relationship between Passengers and TripHistories.** A Passenger can appear on many TripHistories, but a TripHistory only belong to one Passenger.
- o **M:N relationship between Passengers and Trips.** A Passenger can go on many different Trips and a Trip can have more than one Passenger.

2. **Cabins** - describes the type of Cabins available for selection

- o cabinID - INT(11), PK, AI, NN
- o cabinType - VARCHAR(100), NN
- o specialNeeds - BOOLEAN, NN

Relationships:

- o **1:M relationship between Cabins and Trips.** A Cabin type can be available for many different Trips, but a Trip can only have one Cabin type selected.

3. **MealPlans** - describes the food service and drinks covered in different Meal Plans.

- o mealID - INT(11), PK, AI, NN
- o mealPackage - VARCHAR(100), NN
- o detail - VARCHAR(225), NN

Relationships:

- o **1:M relationship between MealPlans and Trips.** A MealPlan Type can be available for many different Trips, but a Trip can only have one MealPlan type selected.

4. **CruiseShips** - records the details of the Cruise that is sailing

- o cruiseShipID - INT(11), PK, AI, NN
- o shipName - VARCHAR(255), NN
- o destination - VARCHAR(100), NN

Relationships:

- **1:M relationship between CruiseShips and Trips.** A CruiseShip can appear in many Trips, but a Trip can only have one CruiseShip.

5. **Trips** - records all the information of a particular Trip.

- tripID - INT(11), PK, AI, NN
- startDate - DATE NN
- cruiseShipID - INT(11), FK, NN
- mealID - INT(11), FK, NN
- cabinID - INT(11), FK, NN

Relationships:

- **M:N relationship between Trips and Passengers.** A Passenger can go on many different Trips and a Trip can have more than one Passenger.
- **1:M relationship between Trips and TripHistories.** A Trip can appear on many TripHistories but TripHistory will only have one recording of this specific Trip.
- **M:1 relationship between Trips and CruiseShips.** A Trip can only have one CruiseShip, but a CruiseShip can appear in many Trips.
- **M:1 relationship between Trips and Cabins.** A Trip can have one Cabin type selected, but a Cabin type can be available for many different Trips.
- **M:1 relationship between Trips and MealPlans.** A Trip can have one MealPlan type selected, but a MealPlan Type can be available for many different Trips.

6. **TripHistories** - records all the trips taken by a Passenger.

- tripHistoryID - INT(11), PK, AI, NN
- tripID - INT(11) FK, NN
- passengerID - INT(11) FK

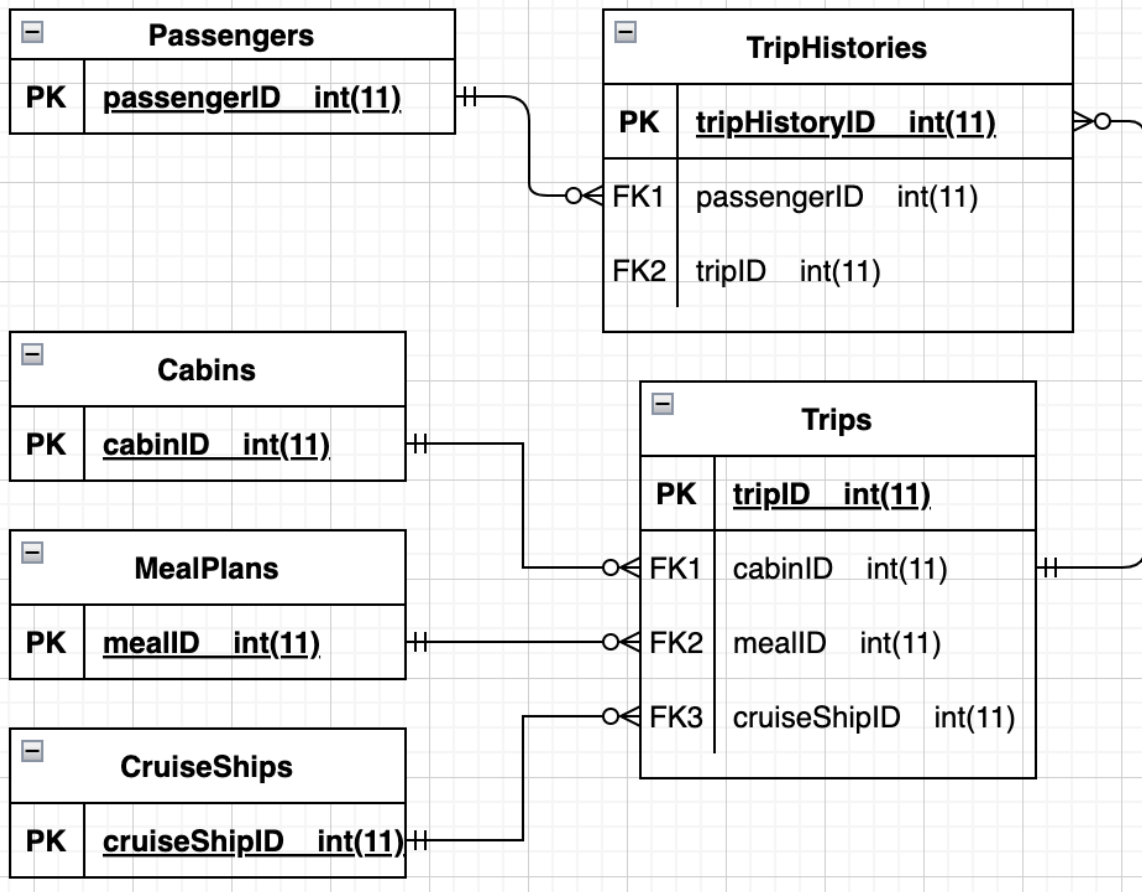
Relationships:

- **M:1 relationship between TripHistories and Passengers.** A TripHistory can have more than one Passenger recorded in it (if not going alone), but a Passenger can only have one TripHistory.
- **M:1 relationship between TripHistories and Trips.** A TripHistory can have many Trips, but a Trip can only appear on one TripHistory.

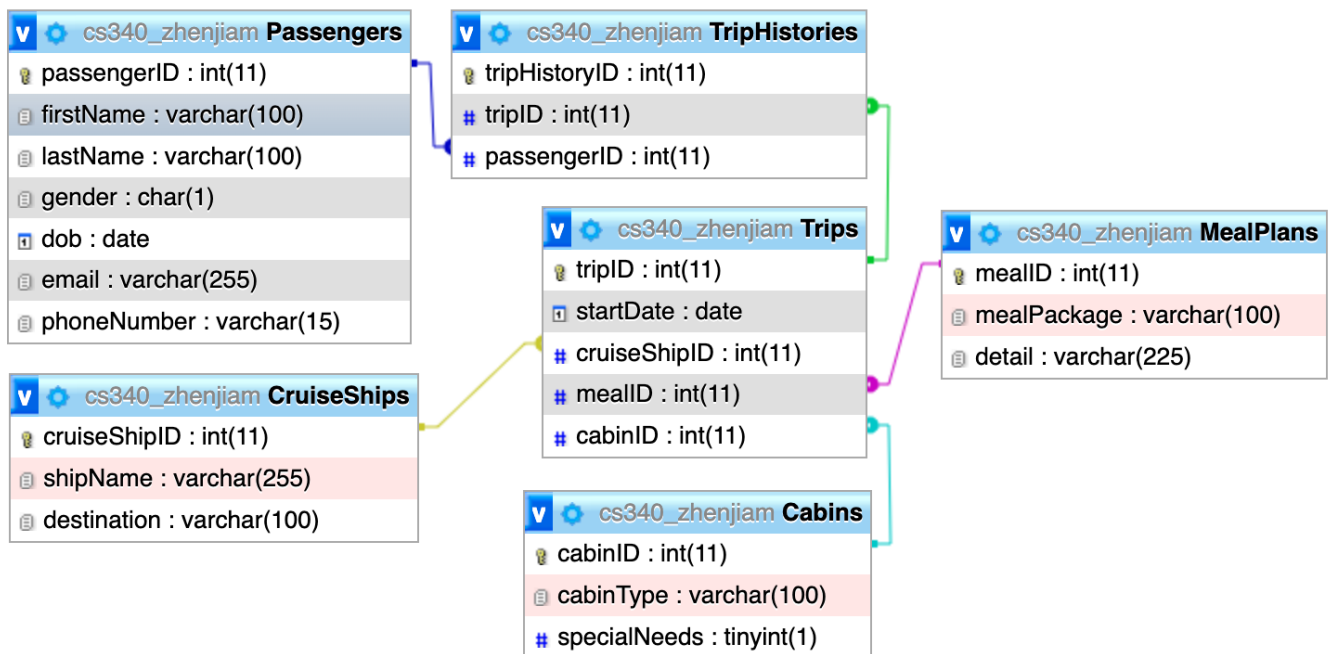
Entity Table Assignments:

- Jia May - Passengers, Cabins, MealPlans
- Wesley - CruiseShips, Trips, TripHistory

Entity-Relationship Diagram:



Schema:



Example Data Tables:

Passengers

passengerID	firstName	lastName	gender	dob	email	phoneNumber
1	Anna	Smith	F	1998/04/03	asmith@gmail.com	1231234
2	Bob	Miller	M	1997/05/15	bmiller@gmail.com	1235678
3	Cathy	Evans	F	2000/06/28	cevans@bing.com	1239012

TripHistories

tripHistoryID	tripID	passengerID
1	3	1
2	2	2
3	2	3

Trips

tripID	startDate	cruiseShipID	mealID	cabinID
1	2021/03/14	3	2	2
2	2020/04/15	2	4	3
3	2020/07/20	1	1	1

Cabins

cabinID	cabinType	specialNeeds
1	Basic - Lower Deck	0
2	Balcony - Upper Deck	1
3	Suite - Upper Deck	1

MealPlans

mealID	mealPackage	detail
1	Basic Dining	3 meals a day at the Main Dining Hall. Drinks included
2	Chop's Grille	Basic Dining + A dinner at Chop's Grille specialty restaurant
3	3-Nights Specialty Dining	Basic Dining + Dinner at any 3 specialty restaurants
4	Unlimited Dining	Basic Dining + A specialty restaurant dinner every night (plus lunch on sea days) for a fixed price.

CruiseShips

cruiseShipID	shipName	destination
1	Stars N Sea	Puerto Rico
2	Teressa	Caribbeans
3	Sea Wonder	Bahamas

UI Screen Shots

DISPLAY HOME PAGE

Welcome to the Royal Cruise Lines Database

Navigate Through Our Database

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### DISPLAY PASSENGERS PAGE

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## Passengers Page

| passengerID | firstName | lastName | gender | dob        | email             | phoneNumber |                      |                        |
|-------------|-----------|----------|--------|------------|-------------------|-------------|----------------------|------------------------|
| 1           | Anna      | Smith    | F      | 1998-04-03 | asmith@gmail.com  | 1231234     | <a href="#">Edit</a> | <a href="#">Delete</a> |
| 2           | Bob       | Miller   | M      | 1997-05-15 | bmiller@gmail.com | 1235678     | <a href="#">Edit</a> | <a href="#">Delete</a> |
| 3           | Cathy     | Evans    | F      | 2000-06-28 | cevans@bing.com   | 1239012     | <a href="#">Edit</a> | <a href="#">Delete</a> |

Add New Passenger

Return Home

### ADD PASSENGER PAGE

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## Passengers Page

Add Passenger

First Name:

Last Name:

Gender:

DOB:  ☐

Email:

Phone Number:

Add Passenger

Cancel

## EDIT PASSENGER PAGE

Editing Passenger:

| passengerID | firstName | lastName | gender | dob        | email            | phoneNumber |
|-------------|-----------|----------|--------|------------|------------------|-------------|
| 1           | Anna      | Smith    | F      | 1998-04-03 | asmith@gmail.com | 1231234     |

Edit Passenger

First Name: Anna

Last Name: Smith

Gender: F

DOB: 04 / 03 / 1998

Email: asmith@gmail.com

Phone Number: 1231234

Edit Passenger

cancel

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DISPLAY TRIPS PAGE

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Trips Page

tripID	startDate	cruiseShipID	mealID	cabinID		
1	2021-03-14	3	2	2	Edit	Delete
2	2020-04-15	2	4	3	Edit	Delete
3	2020-07-20	1	1	1	Edit	Delete

Add New Trip

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ADD TRIP PAGE

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Trips Page

Add Trip

Start Date: mm / dd / yyyy

Cruise Ship ID:

Meal Plan ID:

Cabin ID:

Add Trip

Cancel

EDIT TRIP PAGE

Editing Trip:

tripID	startDate	cruiseShipID	mealID	cabinID
1	2021-03-14	3	2	2

Edit Trip

Start Date: 03 / 14 / 2021 Cruise Ship ID: Meal Plan ID: Cabin ID:

Edit Trip

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## DISPLAY TRIPHISTORIES PAGE

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Trip Histories Page

| tripHistoryID | tripID | passengerID |                      |                        |
|---------------|--------|-------------|----------------------|------------------------|
| 1             | 3      | 1           | <a href="#">Edit</a> | <a href="#">Delete</a> |
| 2             | 2      | 2           | <a href="#">Edit</a> | <a href="#">Delete</a> |
| 3             | 2      | 3           | <a href="#">Edit</a> | <a href="#">Delete</a> |

Add New Trip History

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## ADD TRIPHISTORY PAGE

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Trip Histories Page

Add Trip History

Passenger ID:  Trip ID:

## EDIT TRIPHISTORY PAGE

Editing Trip History:

| tripHistoryID | tripID | passengerID |
|---------------|--------|-------------|
| 1             | 3      | 1           |

Edit Trip History

Passenger ID:  Trip ID:

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DISPLAY CRUIESHIP PAGE

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CruiseShips Page

cruiseShipID	shipName	destination	
1	Stars N Sea	Puerto Rico	Edit
2	Teressa	Caribbeans	Edit
3	Sea Wonder	Bahamas	Edit

Add New Cruise Ship

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ADD CRUIESHIP PAGE

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CruiseShips Page

Add Cruise Ships

Ship Name: Destinations:

EDIT CRUISESHIP PAGE

Editing CruiseShip:

cruiseShipID	shipName	destination
1	Stars N Sea	Puerto Rico

Edit Cruise Ship

Ship Name: Stars N Sea Destination: Puerto Rico

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## DISPLAY MEALPALNS PAGE

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**Meal Plans Page**

| mealID | mealPackage                  | detail                                                                                                   |                      |
|--------|------------------------------|----------------------------------------------------------------------------------------------------------|----------------------|
| 1      | Basic Dining                 | 3 meals a day at Main Dining Hall.<br>Drinks included                                                    | <a href="#">Edit</a> |
| 2      | Chop's Grille                | Basic Dining + A dinner at Chop's Grille<br>specialty restaurant                                         | <a href="#">Edit</a> |
| 3      | 3-Nights<br>Specialty Dining | Basic Dining + Dinner at any 3 specialty<br>restaurants                                                  | <a href="#">Edit</a> |
| 4      | Unlimited Dining             | Basic Dining + A specialty restaurant<br>dinner every night (plus lunch on sea<br>days) for fixed price. | <a href="#">Edit</a> |

## ADD MEAL PLAN

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**Meal Plans Page**

**Add Meal Plans**

Meal Package: Details:

EDIT MEALPLAN PAGE

Editing Meal Plan:

| mealID | mealPackage  | detail                                             |
|--------|--------------|----------------------------------------------------|
| 1      | Basic Dining | 3 meals a day at Main Dining Hall. Drinks included |

Edit Meal Plan

Meal Plan: Basic DiningDetails: 3 meals a day at Main Dining Hall

Edit Meal Plancancel



DISPLAY CABINS PAGE

PassengersTripsTrip HistoriesCruiseShipsCabinsMeal Plans

Cabins Page

| cabinID | cabinType            | specialNeeds |      |
|---------|----------------------|--------------|------|
| 1       | Basic - Lower Deck   | 0            | Edit |
| 2       | Balcony - Upper Deck | 1            | Edit |
| 3       | Suite - Upper Deck   | 1            | Edit |

Add New Cabin

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ADD CABIN PAGE

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Cabins Page

Add Cabin

Cabin Type: Special Needs: Add CabinCancel

EDIT CABIN PAGE

Editing Cabin:

| cabinID | cabinType          | specialNeeds |
|---------|--------------------|--------------|
| 1       | Basic - Lower Deck | 0            |

Edit Cabin

Cabin Type: Basic - Lower Deck Special Needs: 0

Edit Cabincancel