

a) Executive Summary

At the beginning of the quarter, the most frequent feedback we received was to improve the consistency of our naming conventions for both field and data entity names. Together, we decided to adopt a camel case naming convention. For example, fields would begin with a lower case letter and then each word within the field name would start with an uppercase letter, such as with the field `firstName`. Data entity names would have a capital letter for each word within the name, such as with the entity `TourGuides`.

As we progressed through the project, we added more pages to our website to account for all the main tables and intersection tables of our schema. In addition, we began incorporating a wider variety of relationships between tables by including the nullable relationship between `Locations` and `Tour Guides`.

For the final stretch of the project, our largest challenge and most frequent feedback was to have all the CRUD operations working correctly. On our initial attempt to have CRUD operations working, we were able to get the Read and partially the Create operations to work, however, we had several bugs with the Update and Delete operations. With the help of our feedback and the node starter code provided to use, we were able to work through these issues and fully implement CRUD operations for all the tables in our schema.

With all of these changes, we attempted to incorporate the great feedback from our peers and create a project that was more reflective of a real-world implementation of a database and accompanying front-end.

b) Project Outline and Database Outline

Overview: US Adventures Tour Guides Company employs over 250 tour guides that provide over 200,000 sightseeing tours annually in 10 different locations across the US. They need a database driven website to optimize their workflows and to track sightseeing trends to increase efficiency in their business. This way they can invest more in their high yield locations and less in the less popular locations.

Sightseeing Tour Management System

- TourGuides: Employees that work for the sightseeing company

- idTourGuide: int, auto_increment, unique, not NULL, PK
- firstName: varchar(50), not NULL
- middleName: varchar(50),
- lastName: varchar(50), not NULL
- yearsAsGuide: int, not NULL
- baseLocation: Location ID Foreign key
- hourlyRate: Decimal, not NULL

Relationship(s):

- M:1 relationship with Locations because each tour guide is based in one location, but one location can have many tour guides.
- M:M relationship with Tours because a tour guide can have many tours and a tour can have more than one tour guide

- Tourists: Customers going on sightseeing tours

- idTourist: int, auto_increment, unique, not NULL, PK
- firstName: varchar(50), not NULL
- middleName: varchar(50)
- lastName: varchar(50), not NULL
- toursAttended (Total Number) int, not NULL

- email: varchar, not NULL
- phoneNumber : varchar, not NULL

Relationship: Has a M:M relationship with tours because multiple tourists can go on multiple tours.

- Locations: Tour sight destinations.

- idLocation: int, auto_increment, unique, not NULL, PK
- address: varchar, not NULL
- locationType: Location Type ID (FK)

Relationship(s):

- 1:M relationship with LocationTypes because each location can only be one type
- 1:M relationship with Tours because multiple tours can occur at one location.
- 1:M relationship with TourGuides because they are based in one location.

- LocationTypes

- idLocationType: int, auto_increment, unique, not NULL, PK
- locationType (Museum, Nature, Historical site, etc): varchar, not NULL
- description: varchar, not NULL

Relationship(s):

- 1:M relationship with Locations because each location has one type, but 1 type can be in multiple locations.

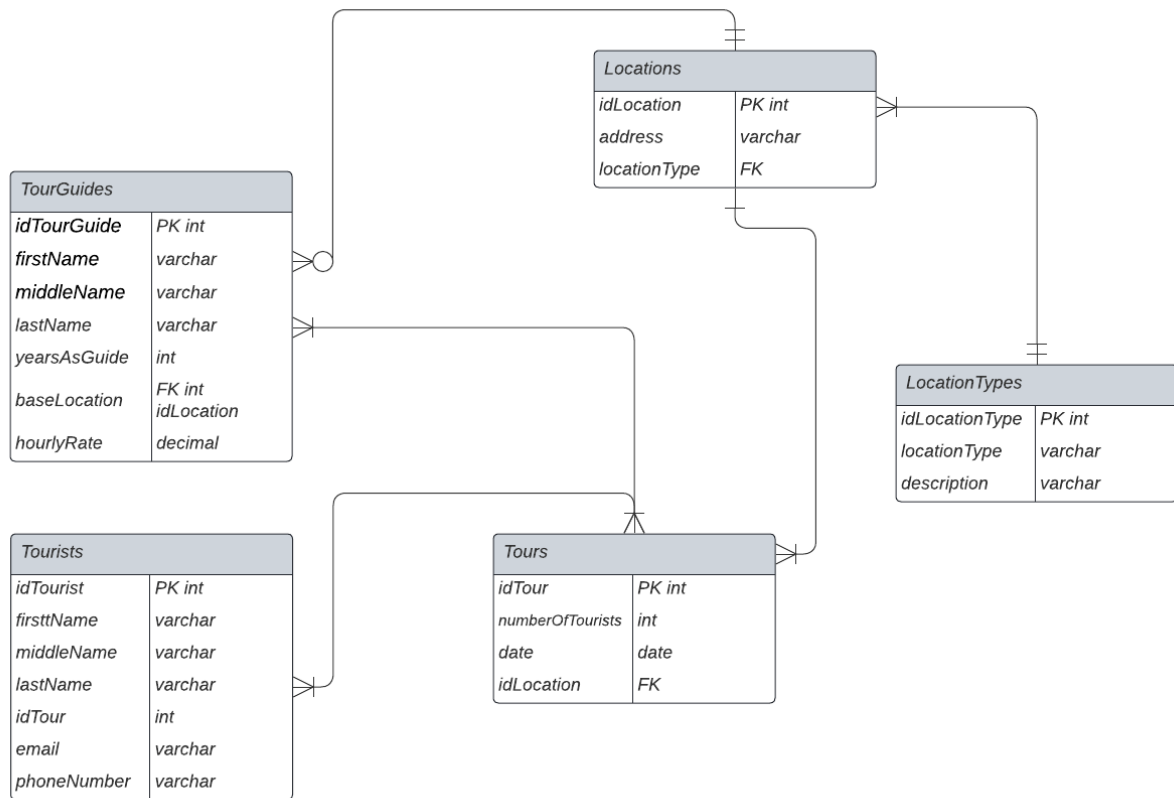
- Tours

- idTour: int, auto_increment, unique, not NULL, PK
- numberOfTourist: int, not NULL
- date: Date, not Null
- location: Location ID (FK)

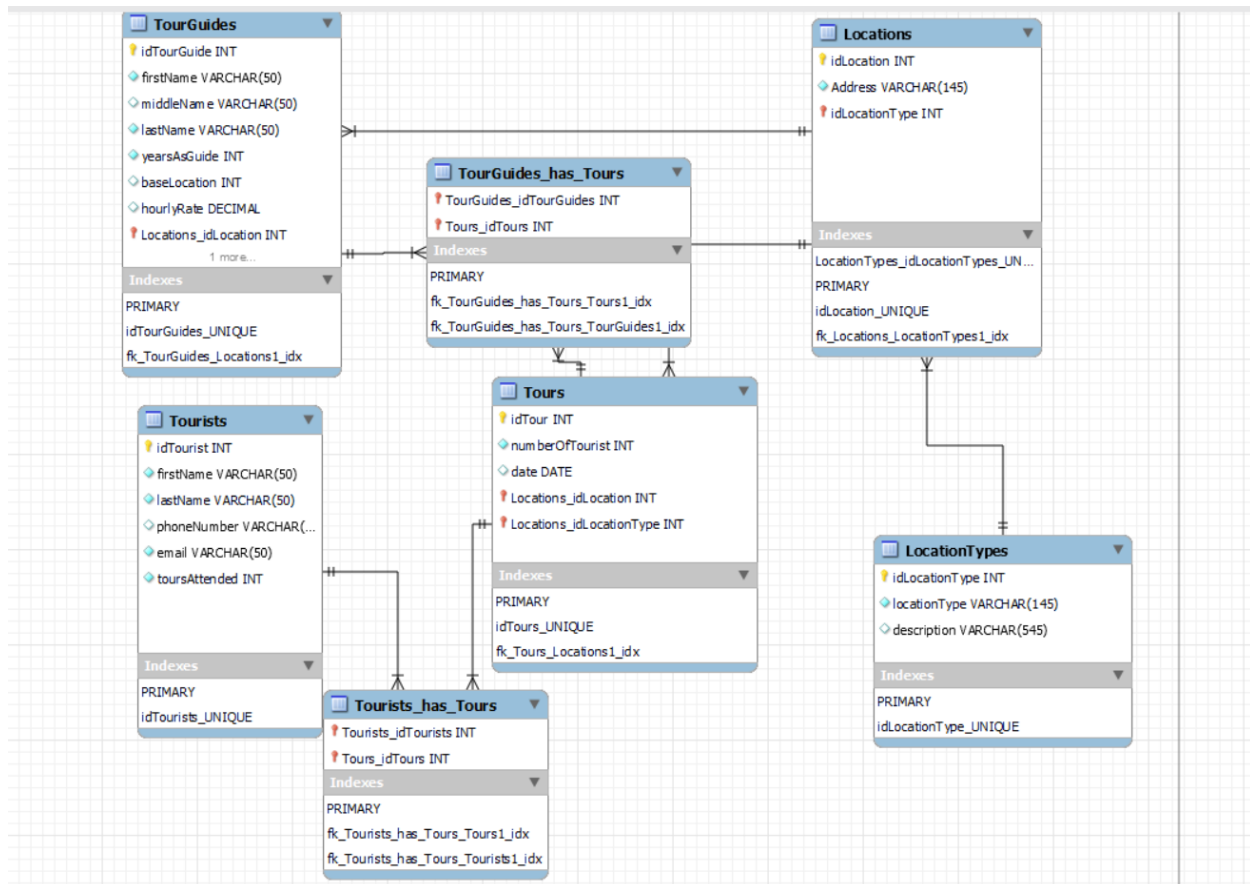
Relationship(s):

- M:M relationship with TourGuides since a tour guide can have many tours and a tour can have more than one tour guide
- 1:M relationship with Locations because 1 location will have multiple tours, but tours can only happen in one location.
- M:M relationship with Tourists because tourists can take multiple tours and each tour can have multiple tourists

c) Entity-Relationship Diagram



d) Schema



e) Example Data

TourGuides:

idTourGuide	baseLocation	firstName	middleName	lastName	yearsAsGuide	hourlyRate
1	2	Mark	James	Robinson	1	2
2	3	Timmy		Turner	10	12.34
3	1	Oprah	Gail	Winfrey	23	250
4	1	Joe	Average	Guy	0	7.25
5	3	Taylor	Alison	Swift	7	22.12

Tourists:

idTourist	firstName	middleName	lastName	toursAttended	email	phoneNumber
1	James	Michael	Smith	5	James.Smith@gmail.com	867-867-5309
2	Tyler		Vance	2	vancety@oregonstate.edu	123-456-7899
3	Matthew		Hearne	7	hearnem@oregonstate.edu	098-765-4321
4	Ariel	Little	Mermaid	1	ariel@undertesea.com	111-111-1111

Tours:

idTour	numberOfTourist	date	idLocation
1	6	2023-07-16	1
2	2	2023-07-17	3
3	2	2023-07-18	4
4	3	2023-07-19	2
5	1	2023-07-20	2

Locations:

idLocation	address	idLocationType
1	123 Potato Stree San Diego CA 92101	1
2	Smithsonian Institution, 600 Maryland Ave SW, Washington, DC 20024	2
3	20 W 34th St., New York, NY 10001	3
4	US Highway 101 Golden Gate Brg, San Francisco, CA	3

LocationTypes:

idLocationType	locationType	description
1	Beach	A beach along a body of water
2	Museum	Museum
3	Historic Landmark	A building, statue, natural structure, or other notable landmark

TourGuides_have_Tours:

idTourGuides_have_Tours	idTour	idTourGuide
1	1	1
2	1	2
3	2	3
4	3	4
5	4	4

6	5	5
7	6	5

Tourists_have_Tours:

idTourists_have_Tours	idTour	idTourist
1	2	1
2	2	4
3	4	2
4	4	3
5	5	4

e) Screen captures of each of the UI

Home page:

READ/BROWSE/DISPLAY Home page (index)

US Adventures Tour Guides Company

[Home](#) [Tour Guides](#) [Tourists](#) [Locations](#) [Location Types](#) [Tours](#) [Tour Guide Assignments](#) [Tourist Assignments](#)

About

US Adventures Tour Guides Company employs over 250 tour guides that provide over 200,000 sightseeing tours annually in 10 different locations across the US. Come explore the great destinations with us and learn all about some historic sites in the US with our award winning tour guides.

Tour Guides page which implements CRUD for TourGuides table:

READ/BROWSE/DISPLAY Tour Guides

US Adventures Tour Guides Company

[Home](#) [Tour Guides](#) [Tourists](#) [Locations](#) [Location Types](#) [Tours](#) [Tour Guide Assignments](#) [Tourist Assignments](#)

Tour Guides

Tour Guide ID	Base Location	First Name	Middle Name	Last Name	Years as a Guide	Hourly Rate	Delete
1	Smithsonian Institution, 600 Maryland Ave SW, Wash	Mark	James	Robinson	1	\$10	Delete
2	20 W 34th St., New York, NY 10001	Timmy		Turner	10	\$12	Delete
3	123 Potato Stree San Diego CA 92101	Oprah	Gail	Winfrey	23	\$120	Delete

Adding a new Tour Guide

CREATE/INSERT/ADD NEW Tour Guides

Adding a new Tour Guide

To add a new tour guide, please fill out the information below and click 'Submit'!

Base Location: [Select a Base Location](#)

First Name:

Middle Name:

Last Name:

Years as a tour guide:

Hourly Rate:

[Submit](#)

Editing a Tour Guide

DELETE Tour Guides: clicking the delete button here will delete all the records which include this Tour Guide in the TourGuides_have_Tours table due to the M:N relationship between the two tables.

Tour Guides							
Tour Guide ID	Base Location	First Name	Middle Name	Last Name	Years as a Guide	Hourly Rate	Delete
1	Smithsonian Institution, 600 Maryland Ave SW, Wash	Mark	James	Robinson	1	\$10	Delete
2	20 W 34th St., New York, NY 10001	Timmy		Turner	10	\$12	Delete
3	123 Potato Stree San Diego CA 92101	Oprah	Gail	Winfrey	23	\$120	Delete

EDIT/UPDATE Tour Guides: updating a Tour Guide here will update all the records which include this Tour Guide in the TourGuides_have_Tours table due to the M:N relationship between the two tables

Edit a Tour Guide

To edit tour guide, please select their name from the dropdown and update the information as needed!

Tour Guide ID:

Enter a new base location:

Edit first name:

Edit middle name:

Edit last name:

Years as Guide:
 Hourly Rate:

Tourists page which implements CRUD for Tourists table:
 READ/BROWSE/DISPLAY Tourists

US Adventures Tour Guides Company							
Home	Tour Guides	Tourists	Locations	Location Types	Tours	Tour Guide Assignments	Tourist Assignments
Tourists							
Tourist ID	First Name	Middle Name	Last Name	Number of Tours Attended	Email	Phone Number	Delete
10	First	Middle	Last	12	first.middle.last@email.com	123456	Delete
14	Bugs	B	Bunny	6	bugs.bunny@looney.com	555-555-5555	Delete
15	Test	Middle	New	3	test@test.com	987-777-1111	Delete

CREATE/INSERT/ADD NEW Tourists

Adding a Tourist

To add a new tourist, please enter the information below and click 'Submit'!

First Name:
 Middle Name:
 Last Name:

Number of Tours Attended:

Email:
 Phone Number:

DELETE Tourists: clicking the delete button here will delete all the records which include this Tourist in the Tourists_have_Tours table due to the M:N relationship between the two tables.

Tourists							
Tourist ID	First Name	Middle Name	Last Name	Number of Tours Attended	Email	Phone Number	Delete
10	First	Middle	Last	12	first.middle.last@email.com	123456	Delete
14	Bugs	B	Bunny	6	bugs.bunny@looney.com	555-555-5555	Delete
15	Test	Middle	New	3	test@test.com	987-777-1111	Delete

Adding a Tourist

EDIT/UPDATE Tourists: updating a Tourist here will update all the records which include this Tour Guide in the Tourists_have_Tours table due to the M:N relationship between the two tables

Update a Tourist	
To update a specific tourist, select their name from the drop-down menu and edit the information as needed!	
Full Name: <input type="text" value="Select a tourist"/>	
Number of Tours Attended: <input type="text"/>	
Email: <input type="text"/>	Phone Number: <input type="text"/>
<input type="button" value="Submit"/>	

Locations page which implements CRUD for Locations table:

READ/BROWSE/DISPLAY Locations

US Adventures Tour Guides Company			
Home Tour Guides Tourists Locations Location Types Tours Tour Guide Assignments Tourist Assignments			
Locations			
Location ID	Address	Location Type	Delete
1	123 Potato Stree San Diego CA 92101	Beach	Delete
2	Smithsonian Institution, 600 Maryland Ave SW, Wash	Museum	Delete
3	20 W 34th St., New York, NY 10001	Historic Landmark	Delete
4	US Highway 101 Golden Gate Brg, San Francisco, CA	Historic Landmark	Delete
7	1234 Street Beach	Beach	Delete

CREATE/INSERT/ADD NEW Locations

Adding a new Location	
To add a new Location, please fill out the information below and click 'Submit'!	
Address: <input type="text"/>	Location Type: <input type="text" value="Select a Location Type"/> <input type="button" value="Submit"/>

Edit Location

DELETE Locations

Locations			
Location ID	Address	Location Type	Delete
1	123 Potato Stree San Diego CA 92101	Beach	Delete
2	Smithsonian Institution, 600 Maryland Ave SW, Wash	Museum	Delete
3	20 W 34th St., New York, NY 10001	Historic Landmark	Delete
4	US Highway 101 Golden Gate Brg, San Francisco, CA	Historic Landmark	Delete
7	1234 Street Beach	Beach	Delete

EDIT/UPDATE Locations

Edit a Location	
To edit Location, please fill select the location ID and update the information as needed!	
Location ID:	Select a Location ID ▼
Enter a new address:	<input type="text"/>
Location Type:	Select a Location Type ▼
<input type="button" value="Submit"/>	

Location Types page which implements CRUD for LocationTypes table: READ/BROWSE/DISPLAY Location Types

US Adventures Tour Guides Company			
Home Tour Guides Tourists Locations Location Types Tours Tour Guide Assignments Tourist Assignments			
Location Types			
Location Type ID	Location Type	Description	Delete
1	Beach	A beach along a body of water	Delete
2	Museum	Museum	Delete
3	Historic Landmark	A building, statue, natural structure, or other notable landmark	Delete
4	Amusement Park	An amusement park with roller coasters and other fun rides	Delete

CREATE/INSERT/ADD NEW Location Types

Adding a new Location Type	
To add a new location type, please fill out the information below and click 'Submit'!	
Location Type:	<input type="text"/>
Description:	<input type="text"/>
<input type="button" value="Submit"/>	

DELETE Location Types

Location Types			
Location Type ID	Location Type	Description	Delete
1	Beach	A beach along a body of water	Delete
2	Museum	Museum	Delete
3	Historic Landmark	A building, statue, natural structure, or other notable landmark	Delete
4	Amusement Park	An amusement park with roller coasters and other fun rides	Delete

EDIT/UPDATE Location Types

Edit a Location Type	
To edit location type, please select the Location Type ID and update the information as needed!	
Location Type ID: <input type="text" value="Select a Location Type"/>	
Location Type: <input type="text"/>	Description: <input type="text"/>
<input type="button" value="Submit"/>	

Tours page which implements CRUD for Tours table:

READ/BROWSE/DISPLAY Tours

US Adventures Tour Guides Company						
Home	Tour Guides	Tourists	Locations	Location Types	Tours	Tour Guide Assignments
Tours						
Tour ID	Number of Tourists	Tour Date	Location Address	Delete		
31	5	2023-07-17	Smithsonian Institution, 600 Maryland Ave SW, Wash	Delete		
32	3	0000-00-00	20 W 34th St., New York, NY 10001	Delete		
34	3	2023-08-15	US Highway 101 Golden Gate Brg, San Francisco, CA	Delete		
35	6	2023-09-06	123 Potato Stree San Diego CA 92101	Delete		
37	6	2023-08-22	Smithsonian Institution, 600 Maryland Ave SW, Wash	Delete		
42	11	2023-09-05	20 W 34th St., New York, NY 10001	Delete		
43	14	2023-08-21	20 W 34th St., New York, NY 10001	Delete		

CREATE/INSERT/ADD NEW Tours

Adding a New Tour	
To add a new tour, please fill out the information below and click 'Submit'!	
Number of Tourists: <input type="text"/>	
Date of Tour: <input type="text" value="mm / dd / yyyy"/>	
Location Address <input type="text" value="Select a Location"/>	
<input type="button" value="Submit"/>	

DELETE Tours

Tours				
Tour ID	Number of Tourists	Tour Date	Location Address	Delete
31	5	2023-07-17	Smithsonian Institution, 600 Maryland Ave SW, Wash	Delete
32	3	0000-00-00	20 W 34th St., New York, NY 10001	Delete
34	3	2023-08-15	US Highway 101 Golden Gate Brg, San Francisco, CA	Delete
35	6	2023-09-06	123 Potato Stree San Diego CA 92101	Delete
37	6	2023-08-22	Smithsonian Institution, 600 Maryland Ave SW, Wash	Delete
42	11	2023-09-05	20 W 34th St., New York, NY 10001	Delete
43	14	2023-08-21	20 W 34th St., New York, NY 10001	Delete

EDIT/UPDATE Tours

Edit a Tour	
To update a specific tour, select the tour ID from the drop-down menu and edit the information as needed!	
Tour ID: <input type="text" value="Select a Tour"/>	
Number of tourists: <input type="text"/>	
Date of Tour: <input type="text" value="mm/dd/yyyy"/>	
<input type="button" value="Submit"/>	

Tour Guide Assignments page which implements CRUD for TourGuides_have_Tours intersection table:

READ/BROWSE/DISPLAY Tour Guide Assignments

US Adventures Tour Guides Company						
Home	Tour Guides	Tourists	Locations	Location Types	Tours	Tour Guide Assignments
Tour Guide Assignments						
Tour Guide Assignment ID	Tour ID	Tour Guide Name	Tour Date	Delete		
10	35	Timmy Turner	2023-09-06	Delete		
13	31	Timmy Turner	2023-07-17	Delete		
16	35	Timmy Turner	2023-09-06	Delete		

CREATE/INSERT/ADD NEW Tour Guide Assignments

Assign a Tour Guide to a Tour	
To add a new tour guide assignment, please fill out the information below and click 'Submit'!	
Tour Guide: <input type="text" value="Select a Tour Guide"/>	Tour ID: <input type="text" value="Select a Tour"/>
<input type="button" value="Submit"/>	

DELETE Tour Guide Assignments

Tour Guide Assignments				
Tour Guide Assignment ID	Tour ID	Tour Guide Name	Tour Date	Delete
10	35	Timmy Turner	2023-09-06	Delete
13	31	Timmy Turner	2023-07-17	Delete
16	35	Timmy Turner	2023-09-06	Delete

EDIT/UPDATE Tour Guide Assignments: the M:M relationship is able to be updated by updating the Tour Guide value

Edit Tour Guide Assignment	
To edit a new tour guide assignment, please select the assignment ID below and edit as needed!	
Tour Guide Assignment ID: <input type="text" value="Select a Tour Guide Assignment"/>	Tour Guide: <input type="text" value="Select a Tour Guide"/>
<input type="button" value="Submit"/>	

Tourist Assignments page which implements CRUD for Tourists_have_Tours intersection table:

READ/BROWSE/DISPLAY Tourist Assignments

US Adventures Tour Guides Company

Home

Tour Guides

Tourists

Locations

Location Types

Tours

Tour Guide Assignments

Tourist Assignments

Tourist Assignments

Tourist Assignment ID	Tour ID	Tourist Name	Tour Date	Delete
15	35	Bugs B Bunny	2023-09-06	Delete
16	31	First Middle Last	2023-07-17	Delete
17	37	First Middle Last	2023-08-22	Delete
18	31	Test Middle New	2023-07-17	Delete

CREATE/INSERT/ADD NEW Tourist Assignments

Assign a Tourist to a Tour	
To add a new tourist assignment, please fill out the information below and click 'Submit'!	
Tourist: <input type="text" value="Select a Tourist"/>	Tour ID: <input type="text" value="Select a Tour"/>
<input type="button" value="Submit"/>	

DELETE Tourist Assignments

Tourist Assignments				
Tourist Assignment ID	Tour ID	Tourist Name	Tour Date	Delete
15	35	Bugs B Bunny	2023-09-06	Delete
16	31	First Middle Last	2023-07-17	Delete
17	37	First Middle Last	2023-08-22	Delete
18	31	Test Middle New	2023-07-17	Delete

EDIT/UPDATE Tourist Assignments: the M:M relationship is able to be updated by updating the Tourist value

Edit Tourist Assignment

To add a edit tourist assignment, please select the assignment ID below and edit as needed!

Tourist Assignment ID:

Select a Tourist Assignment ▼

 Tourist:

Select a Tourist ▼

Submit