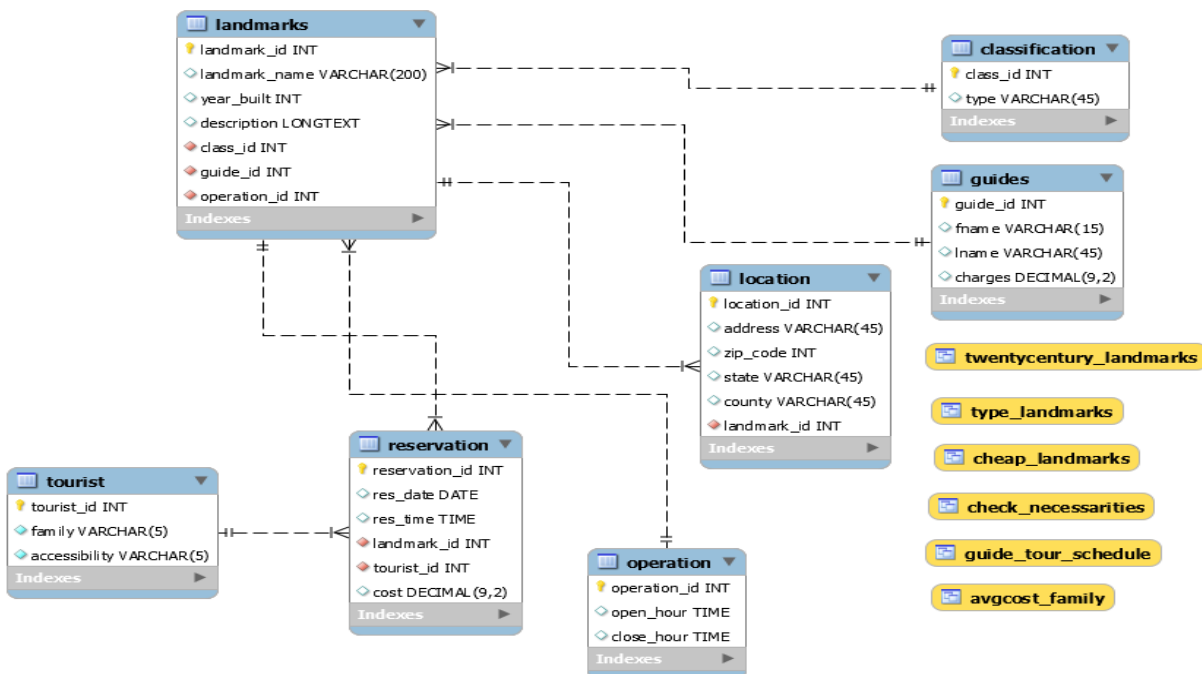


Database Description

Our database is constructed around the various landmarks in the DMV. The database is meant to serve as a tool, so tourists can easily find tourist/cultural features they want to visit within the DMV. Our database is constructed of seven tables and holds 120 tourist/cultural features, filled with important data regarding the landmarks. With our main table being Landmarks, which references five tables: Clarification, Operation, Guides, Reservation, and Location.

1) Logical Design



Our design's purpose is to provide easy-access and convenient information to our potential customers who can be users, tourists, and travel agencies. Creating ERD's helped us to visualize the relationship between how each database is connected. Landmark and location have a one-to-one relationship because only each of one record on the landmark, landmark_id INT is associated with the landmark_id INT on the location meaning, one landmark can only have one address (location), which makes unique value on the tables. Landmark also has one to many relationships with several databases such as classification, guides, operation and reservation. To define one to many relationships, it is when one record on one table can be related or associated with one or more records on another table. So in this case, Landmark and classification share one to many relationships because while the primary key of class_id INT is designed to contain one unique value, the foreign key of class_id INT has multiple instances of the same value. In the

one to many relationship between landmarks and guides share the value `guide_id` INT and in the foreign key guides tables, `guide_id` INT has multiple values under it, meaning that there will be many different guides within the same landmark.

2) Physical Database

Our database satisfies the needs of our potential customers, tourists or users, who are willing to travel in areas in Washington D.C., Virginia, Maryland. Although there are lots of traveler websites including information about landmarks, we found out there is no database for information focused on the locations, DMV. So, our database includes a total of 7 tables and 6 views are landmarks and tourist tables.

Before putting the data into our database, we discussed the ERD tables and what tables to create and omit. We decided to include Landmarks, Tourism, Reservation, Location, Operation and Guides in our database. The Landmarks relate to the historical and significant places in the Washington DC, Maryland and Virginia region while the Tourism/Tourists would be data relevant for the people that come to visit those landmarks. Reservation would be the reservation that the people have in nearby hotels/motels of the place along with location which would encapsulate the address, county, state, zip code, and Landmark identification number in the database. Additionally, operation would essentially keep a record of the hour of operation of the place, which is opening and closing time. Finally, guides would have all of the tourist guides available along with their identification number, names, and how much they would charge.

3) Sample Data

There are a lot of websites and companies that offer tourism information; we found that there is no information which is focused on the areas, DMV. So, we tried to find information about DMV on those websites, but the websites did not include all of the necessary information of DMV such as address, description, etc. For useful and trustworthy data, we used CSV file to collect our data and we looked at where we can scrape the data, and there were some websites that provide landmarks' information with descriptions so we used them when importing values into our tables. We decided to build in the Landmarks table, the data include each unique name of landmarks and `built_year`, description with `landmarks_id`, `class_id`, `operation_id`, `guide_id`. The historical significance of these landmarks can be identified by using classification information, type such as church, building, house, educational institutes, etc, and description of

landmarks so that the customers can recognize what historical meaning or importance landmarks have. Through the Location table, it includes the data of location in each landmark such as address, state, sip_code, and county.

For tables that we could not acquire real data from a dataset, such as the Guides and Reservation tables, we manually inserted values that represented real world values. There is no way to find personal information of every tour guide associated with the landmarks in our database or get information about all of the reservations to these locations (especially since it likely changes on a weekly basis). Other than manual insertion of the data, we utilized the rand() function in excel for numeric (INT columns) values in order to randomly and unbiasedly accumulate the inputs for the columns.

4) Views / Queries

We created views for the customers(tourists) or users(tour guide) to use our useful information with their own purpose such as tour, management of schedule, etc. Thus, our purpose of the view is sufficiently identifying the organizer/management of necessary information based on demand of our potential customers, tourists and users/tour guide/travelers. The most important thing in the views/queries is that we consider their personal information sensitively so that they do not worry about exposing their private information. Using views is much helpful and efficient to present our data by organizing and managing well.

View	Req. A(X4)	Req. B(X3)	Req. C(X2)	Req. D(X1)	Req. E(X1)
type_landmarks	X	X	X		
guide_tour_schedule	X	X			
check_necessarities	X	X			
cheap_landmarks	X	X		X	
twentycentury_landmarks	X	X			X
avgcost_family	X		X		
Total	6	5	2	1	1

Description of Views/queries

- Query 1: Create a view of landmarks based on the type of landmarks located in Washington D.C, Maryland, and Virginia for the customer who wants to know what type of landmarks are located in each area.
- Query 2: Create a view that displays the list of reservations of guide tours like guide tour schedule so that Users (tour guide) do not confuse their schedule with how much they have to receive in payments from the customers.
- Query 3: Create a view that checks family and accessibility with reservation in order to prepare for the needs or requests of customers.
- Query 4: Create a view that displays the landmarks that cost under \$200 so that families can know the cheaper experiences they can enjoy.
- Query 5: Create a view that shows the houses, museums, and theaters that were built in the 20th century.
- Query 6: This view shows the average cost for families and non-families.

Changes from original design

For hypothetical ERDs, we were changing our ERDs design including the table names and entity-relationship between the tables from the original design because there is a lack of logical connection between the tables. We considered our database to show all about the landmarks, but its design had repeated foreign keys and the tables did not clearly show what we wanted to provide to our customers. Thus, we changed our database to focus on helping tour guides with the landmarks. In addition, we changed some of the attributes from the tables including data types to make sense within the one-to-one relationship or one-to-many relationship so that we made our data include more specific information. About Database Ethics, we would like to handle our customers' private information not to expose anyone. Database Ethics quite impact our design of database and sample data included queries; for example, our queries/views focus on delivering efficiently our data to tourist or users without including any customers' personal information so that the views are organized based on the customers' perspectives that they would like to know such as schedule, type of landmarks, etc.