

## **Introduction**

With 2020 projected sales estimated at \$899 billion, we can all agree on the fact that one of the largest business sectors in the United States is the restaurant industry (National Restaurant Association, 2020). As students who admit to indulging in dining out quite often, our team has created a database about various restaurants in Maryland and Washington, D.C. The database contains various categories of information to fulfill the needs of its users. These categories include general information such as the restaurant's location, customer information including dress code and smoking restrictions. All of these categories will be linked with a specific Restaurant ID. When using the database users will be able to compare restaurants based on their preferences to determine where they wish to eat. It will also answer many questions such as, 'Which restaurants have the best ratings?', or 'What restaurants have the most reservations'?

We chose this topic to help provide a useful database containing local restaurants in the surrounding "DMV" region. As student residents in the Maryland region, we believe that others will benefit from a database that functions as a 'restaurant library'. Instead of digging for information, anyone can find general information in this database with ease. We provide an organized, central location for the information one would be seeking. The intention we have for this project is informative, but also indirectly persuasive. Analyzing this database will provide a person with an idea of the plethora of restaurants around them, and also persuade a person to taste a particular type of cuisine based upon other information such as rating or amenities.

## **Database Description**

### **(Appendix A, Appendix B)**

## **Changes from the Original Design**

The first set of major changes came in the format of the tables. Initially, we had eight different tables with varying degrees of relatedness to restaurants. However, as mentioned in our progress report, we were having a hard time building our ERD since many of these tables could not stand alone, and instead could just be combined into the restaurant information table.

Of the original tables from our proposal, we kept five of them. The general information table expanded significantly in the last few weeks leading up to our final database submission.

Not only does it now include general information about the restaurant, but it also includes information about what amenities are available. We found that we were having a hard time trying to spin the *restaurant\_amentities* table into an easily understood table that could stand on its own (Progress Report, 2020). We also kept the *ratings* table (Progress Report, 2020). Out of *ratings*, we were able to create a table of reviewers, that way each rating belonged not only to a restaurant, but also a specific reviewer too. Our *vendors* table came in handy to create *rest\_vend\_orders*, a table of purchases restaurants made from different vendors for different supplies. Finally, we also kept the *available\_drivers* table, which is a simple list of delivery drivers and the restaurants they deliver for.

Additionally, there are three other tables. Realizing there was no customer information in our database, we added *customer\_information* during the progress report stage. This table features basic information like an identification number, the customer's name, phone number, and email address. From this table, we generated *reservations*. Reservations is a great table because it utilizes foreign keys from *restaurant\_information* and *customers*. The table was also useful to create a query that counted the number of reservations each restaurant had to cancel following the March 30, 2020, the date stay-at-home orders for Washington and Maryland went into effect (*stay\_at\_home*). Finally, we included *payment\_type* to classify how the restaurants pay for their orders with the vendors.

Another major change from our initial proposal was the sample data. The first [dataset](#) we found was for restaurants not in the area (Project Proposal, 2020). However, this dataset was helpful in generating ideas for some of our own tables. Many of the other datasets from Kaggle were on restaurants in other states, like California. While working on the progress report, we did find two different datasets of restaurants in Baltimore City and Montgomery County. However, the datasets still only provided surface level information. We made the executive decision to split up the research of 30 different restaurants amongst ourselves. To ensure we didn't choose the same restaurants, we were each assigned one or two different towns:

- Washington, D.C.
- Germantown and Gaithersburg
- College Park and Bowie

- Upper Marlboro/Waldorf
- Columbia/Laurel

For the other tables, we also split up the work of coming up with names, phone numbers, dates, party sizes, etc. Although the database may not be usable because the data is made up, we have managed to create consistent and realistic data, which is a start to creating a real version of this database in the future.

## **Lessons Learned**

Our biggest takeaway from this project is that we can collect data about things in our surroundings to create an operational database. This operational database can then be useful for others in the real world. Many people go out to eat on a daily basis and our restaurant database has the ability to assist them in making the right selection for their needs. As a result, the database is successful in serving the purpose it was created to fulfill.

Throughout the course of this project, we ran into some issues in the process of working towards a functioning database. These include creating a working ERD, selecting sample data, and importing data. When creating the ERD, we ultimately had to incorporate linking tables into our diagram and make sure we established the proper relationships between tables. In the beginning of this entire process we initially had a broad project scope covering all of the DMV area, however we had to narrow this down to select restaurants in Maryland and Washington, D.C. After careful research for sample restaurant data in these areas, our group decided to each find restaurants and organize them in Google Sheets. As we began to populate our tables, there were countless issues and a lot of time spent cleaning data. Finally, the restaurant database was created and we were able to create queries.

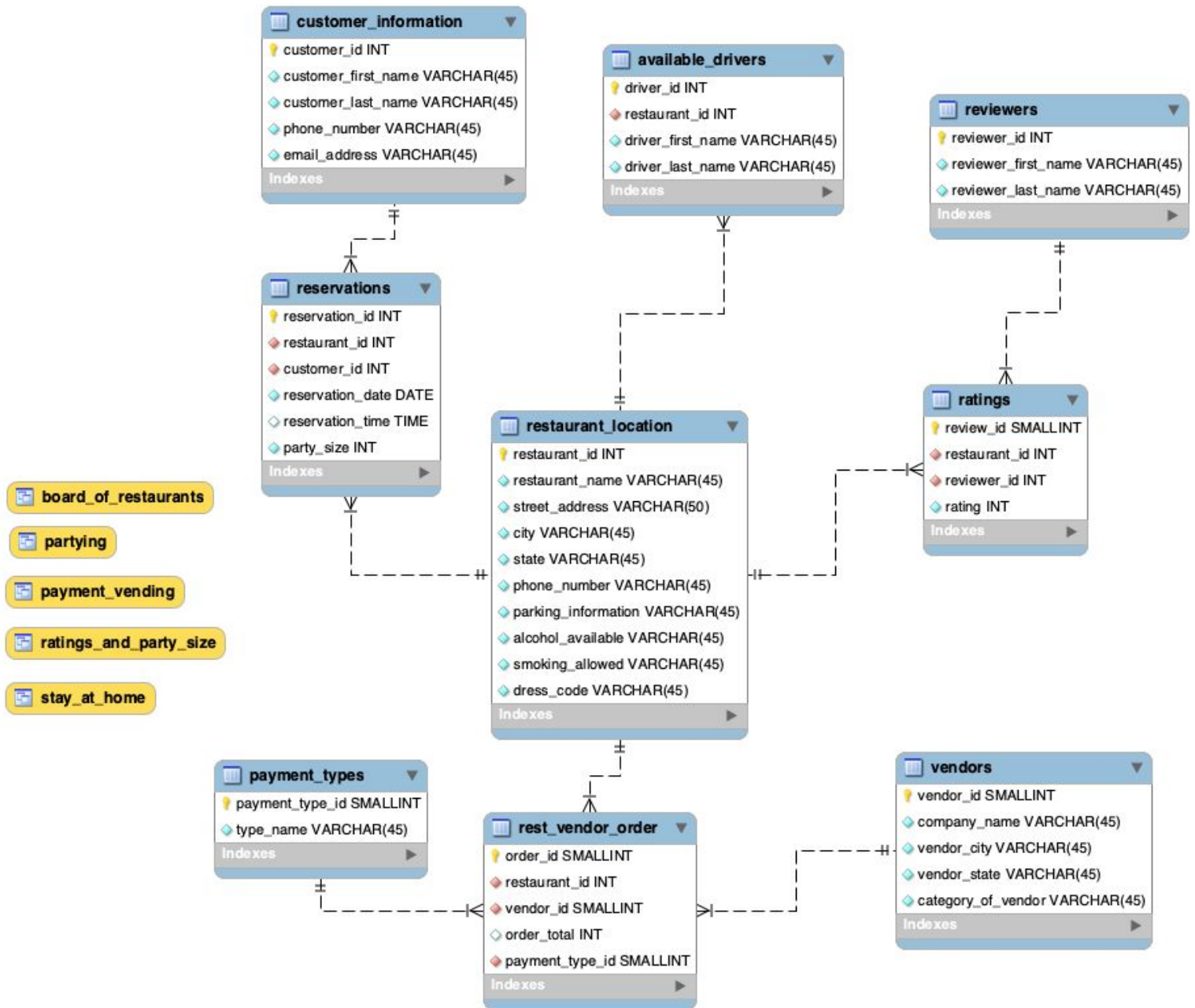
This project required an immense amount of communication among all group members, especially with the course moving online. As a group, we all had to make the sacrifice of spending time on Zoom calls, constantly updating each other on our progress, working late, and pushing through the new format of the class. Without proper communication, our restaurant database would not have been successfully designed and created.

## **Potential Future Work**

As a team, we had a great time working on this project. However, we realized that there are many other ways we could have gone with our project. Instead of doing just restaurants in the DMV, we could do restaurants that specialize in a particular type of cuisine or that serve a particular type of need. With a database of these restaurants we could then go further to identify patterns and even make recommendations to the owners of the restaurant on areas of their business that they might want to focus on to increase sales. For potential customers looking for restaurants offering a particular type of cuisine, our report/analysis can be used as reference. Instead of getting paid for our service, it could be a public service project for our class on behalf of the university.

## Appendix A

### *Logical Database Design*



**Appendix B*****Views/Queries***

<b>View Name</b>	<b>Description</b>
<i>board_of_restaurants</i>	Our group has been contacted by a local board of restaurants to give a report on the restaurants in our database. Our query must display the restaurants, their street address, order totals exceeding \$100 from vendors, vendors and their location. It must also display the ratings for the corresponding restaurants.
<i>partying</i>	For those patrons who may like to party, this view is of those restaurants that have alcohol and allow patrons to smoke.
<i>payment_vending</i>	This view counts how many times a particular payment type and how much money in total (across all the orders) vendors should expect to receive in that payment form.
<i>ratings_and_party_size</i>	This view finds the average party size for restaurants with an average rating greater than 3.5.
<i>stay_at_home</i>	This view counts the number of reservations each restaurant must cancel due to the stay at home order issued for Maryland and Washington, D.C. on March 30, 2020.

## References

National Restaurant Association. (n.d.). National Statistics on the Restaurant Industry.

Retrieved May 11, 2020, from

<https://restaurant.org/research/restaurant-statistics/restaurant-industry-facts-at-a-glance>

Carroll, D., Lampkin, A., Odekunle, F., Tansinda, A., & Tatchim, E. (2020, March 17).

*Project Proposal.*

Carroll, D., Lampkin, A., Odekunle, F., Tansinda, A., & Tatchim, E. (2020, April 17).

*Project Progress Report.*