Database Project Assignment 3: Entity Relationship Diagram & Documentation

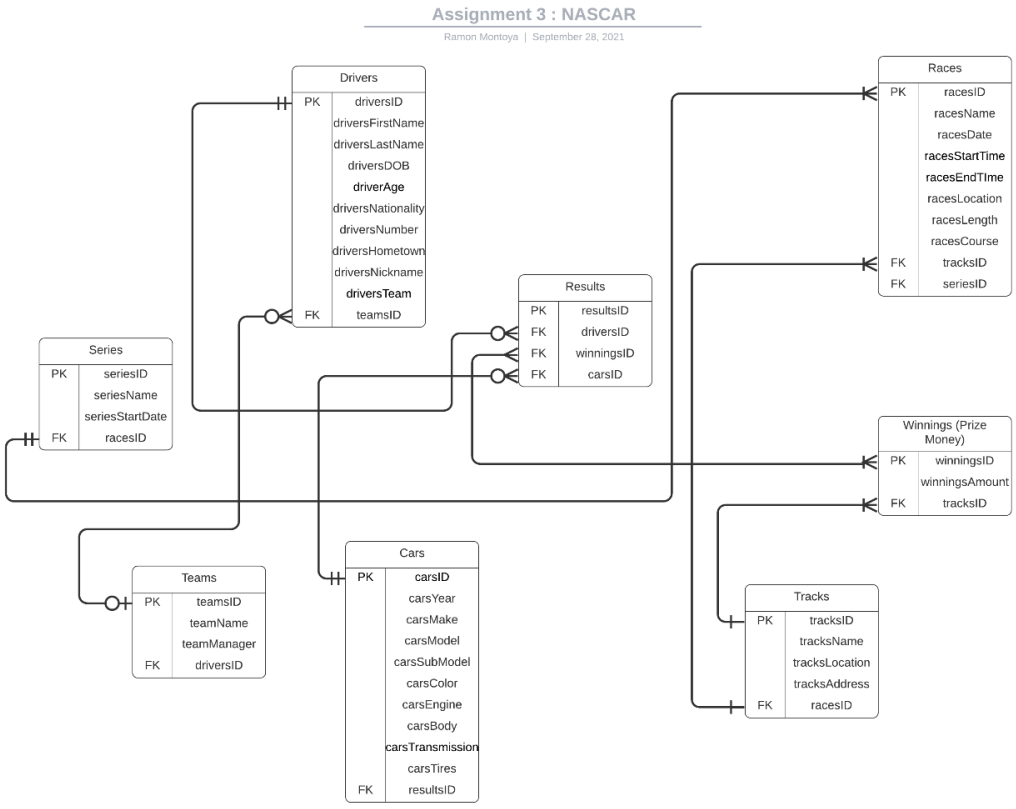
Create an ERD for your database.

- Use a computer software, such as lucid chart or MS Visio
- Identify any foreign keys
- Identify primary keys
- Describe relationships between your tables using crows foot notation.

For each **table** in your ERD, you should have a paragraph explaining:

- What data is in this table?
- What attributes are included?
- Are there any foreign keys?
- What is the primary key?
- What table(s) does this table have a relationship with?
- What is the relationship between the tables, and why is it that?

Upload your assignment as a PDF to Moodle and Github. Show your ERD and explain the business logic on Flipgrid.



In the first table that I will be explaining will be the “Series” table. The reason I created this table called Series is because in NASCAR there are different types and names for all the different tourneys and tournaments that the NASCAR may have. For example, I will most likely be using the Cup Series, the XFINITY Series, the Camping World Truck Series, and the ARCA Menards Series. These are only a few of the NASCAR series there are in NASCAR. Some of the attributes that will be included are seriesID, seriesName, seriesStartDate, and racesID. Like briefly mentioned already I will be using seriesName to include the name of the different NASCAR race series. As well as seriesStartDate to signify a way when the specific NASCAR series will start considering the different start dates that every series may have. The primary key in this table will be seriesID and I will use seriesID to serve as an identity column. The foreign key in this table will be racesID because I will use that to refer to my “Races” table. Which leads to this table having a relationship with my “Races” table. The relationship that my “Series” table has with the “Races” table is a One and only one to one or many. I have it like this because one NASCAR series can only have one ongoing series with either one or many NASCAR races.

The next table I have created is the “Races” table. I created this table because every NASCAR series has a specific number of races that must be scheduled and raced as intended without interruptions. In each different NASCAR race, there is different race details and fixtures that matter which is why I created this “Races” table. For example, each NASCAR race has a different name, different race date, different race start time, different race end time, different race location, different race length, and different racecourses. Which is why I created racesName, racesDate, racesStartTime, racesEndTime, racesLocation, racesLength, and racesCourse as attributes to my “Races” table. In this table, I have two foreign keys which are tracksID and seriesID. I need tracksID and seriesID to have a relationship with the “Tracks” table and the “Series” table. The primary key in this table is the racesID because that will be considered as the identity column for this table. The first relationship for this table is that the “Races” table and the “Tracks” table are a one or many to a one relationship because either one or many races can use only one track at once. The other relationship that exists is “Races” table and the “Series” table which is a one or many to a one and only one relationship. Like mentioned earlier, there can be multiple of races that take place in a season for a specific NASCAR series which is why I have it like that.

Another table that I have is the “Tracks” table. I created this table because NASCAR races are held on racetracks. Also, in NASCAR they usually have a different track for every different race that they in a series. All the tracks that they use in NASCAR to race is different which is why they end up using almost all the tracks there are available for a certain series. For each NASCAR track, there is a track name, track location, and track address. That is why under this table I created tracksName, tracksLocation, and tracksAddress attributes to this table. In this table, I have one foreign key called “racesID”. I created racesID because I need to have it relate to the “Races” table to determine what tracks are to be used for each specific race. The primary key in this table is called “tracksID” because that will be seen as an identity column for the “Tracks” table. The relationship that my “Tracks” table has is with the “Races” table and it is a One to One or many relationships. This relationship exists because we need to know how many races there are going to be to know how many tracks should be opened and ready to have a race going. Also, it is important because the public would possibly want to know what track is going to be used to create plans to see if they can go and see the specific track ahead of time.

The next table I created was the “Winnings” table. I created this table because NASCAR winnings can vary after each race and series. Also, the amount of winnings for an average NASCAR driver can be different considering how they do after each race in different tracks that they may not have raced in before. There are many factors that may come down to winnings (Prize Money) but I kept it pretty simple to show how much a NASCAR driver can make after each race or series. To keep this table simple and understandable, I only added the primary key, the foreign key, and one attribute called “winningsAmount”. The foreign key in this table is called “tracksID” and it is needed because the winnings (prize money) will be referred to after each race is completed at different tracks. The primary key in this table is called “winningsID” because this will be the identity column for this table. The relationship with the “Tracks” table is needed because in my database I will have winnings (prize money) for that specific race after each track is done with the racing event for that day. The relationship that they have is a One to One or many relationships. It is built like this because each track will have a specific winnings amount that goes with it once the racing event at that specific track is over. The winnings may then be taken by the NASCAR driver for himself and his NASCAR team.

Another table that I created is the “Teams” table. I created this table because NASCAR has teams made for racing and they are built by having cars, drivers, managers, and car manufacturer sponsors. There are plenty of NASCAR teams that tend to compete a lot during NASCAR series. Although in this table, I simplified it a bit and added mainly the name of the NASCAR team and whoever was managing it. Which in that case the attributes that I included were teamName and teamManager. The foreign key in this table is called “driversID” and it is needed because each NASCAR team is made up of drivers. The primary key in this table is called “teamsID” because this will be the identity column for this table. The relationship that “Teams” table has is with “Drivers” table and it is a Zero or one to Zero or many relationships. This relationship is needed whenever there is an existing NASCAR team because for a NASCAR team to exist, there needs to be NASCAR drivers to make up that team. Meaning that if there are no NASCAR drivers for a team then there is no NASCAR team to be made at all.

The next table that I created was the “Drivers” table. I created this table because NASCAR teams are made up of by NASCAR drivers who take upon NASCAR racing. Each NASCAR team can only have a max of four drivers that can race for them. With that said, a driver can be anyone who meets the NASCAR qualifications to become part of a team. Some of the attributes that I included are driversFirstName, driversLastName, driversDOB, driversAge, driversNationality, driversNumber, driversHometown, driversNickname, and driversTeam. The basic information of a driver is important because we must know who that person is and to know where he is from. This information is more tailored to know the kind of a person this NASCAR driver is. The foreign key in this table is called “teamsID” and it is needed because we need to know the driver’s team. The primary key in this table is called “driversID” because this will be the identity column for this table. The relationship this table has is with the “Teams” table and it is a Zero or many to Zero or one relationship. This relationship is like this because one NASCAR team can either have zero or many drivers for their team. As well as many drivers can either have one NASCAR team or not have one at all.

Another table that I created the “Cars” table. I created this table because NASCAR has cars that they use to race at these NASCAR series. Each NASCAR can vary from make, model, and type. Also, car

information is important in this case because NASCAR involves cars and is tied around only using cars to race at the tracks. The data that is found in this table includes car year, car make, car model, car sub model, car color, car engine, car body, car transmission, car tires, etc. The attributes that I used for this table are carsYear, carsMake, carsModel, carsSubModel, carsColor, carsEngine, carsBody, carsTransmission, and carsTire. The foreign key in this table is called “resultsID”. The primary key in this table is called “carsID” because this will be the identity column for this table. The relationship that the “Cars” table has is with the “Results” table and it is a One and only one to Zero or many relationships. This relationship is like this because this is the only spot leftover where the “Cars” table can go. Although, the “Cars” table goes straight to the “Results” table since the “Cars” table has a lot of attributes and information to carry over and then it is all joined together in the “Results” table. Since the “Cars” table is very detailed and specific I had it specifically set up this way and had it relate to “Results” the join table.

Lastly, the final table that I created is called the “Results” table. I created this table because I needed a place to put all the NASCAR drivers, all the winnings (prize money), and the different cars meant for NASCAR racing. The data that is found here comes from three different tables called “Drivers”, “ Winnings”, and “Cars”. The information comes from other tables and then gathered all in one table. In a way, I have created a join table for this to work and to explain the relationships. There are no attributes to the table, only one primary key and three foreign keys. Like briefly mentioned, there are three foreign keys called “driversID”, “winningsID”, and “carsID”. There is one primary key called “resultsID” because this will be the identity column for this table. The first relationship this table has is with the “Drivers” table and it is a Zero or many to One and only one relationship. The second relationship this table has is with the “Winnings” table and it is a Many to One or Many relationships. The third relationship this table has is with the “Cars” table and it is a Zero or many to One and only one relationship. All these three relationships are important because it all relates to each other at the end. Also, these three relationships help create and maintain database integrity.