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Development Plan and Environment

**Relational Schema**

* Users
  + User\_Id (Primary Key, INT)
  + Username (Unique, Not Null, VARCHAR)
  + Password (Not Null, VARCHAR)
* Players
  + Player\_Id (Primary Key, INT)
  + Name (Not Null, VARCHAR)
  + Number (Not Null, VARCHAR)
* Teams
  + Team\_Id (Primary Key, INT)
  + Name (Not Null, VARCHAR)
* Fav\_Player
  + FP\_Id (Primary Key, INT)
  + Player\_Id (Foreign Key, INT)
  + User\_Id (Foreign Key, INT)
* Fav\_Team
  + FT\_Id (Primary Key, INT)
  + Team\_Id (Foreign Key, INT)
  + User\_Id (Foreign Key, INT)
* Player\_Plays
  + PP\_Id (Foreign Key, INT)
  + Player\_Id (Foreign Key, INT)
  + Player\_Stat\_Id (Foreign Key, INT)
* Team\_Plays
  + TP\_Id (Primary Key, INT)
  + Team\_Id (Foreign Key, INT)
  + Team\_Stat\_Id (Foreign Key, INT)
* Player\_Stats
  + Player\_Stat\_Id (Primary Key, INT)
  + Week (Not Null, INT)
  + Year (Not Null, INT)
  + Rush\_Yards (INT)
  + Pass\_Yards (INT)
  + Receiving\_Yards (INT)
  + TDs (INT)
  + Fumbles (INT)
  + Interceptions\_Thrown (INT)
  + Tackles (INT)
  + Forced\_Fumbles (INT)
  + Interceptions (INT)
* Team\_Stats
  + Team\_Stat\_Id (Primary Key, INT)
  + Week (Not Null, INT)
  + Year (Not Null, INT)
  + Rush\_Yards (INT)
  + Pass\_Yards (INT)
  + Receiving\_Yards (INT)
  + TDs (INT)
  + Wins (INT)
  + Losses (INT)
  + Interceptions (INT)
  + Forced\_Fumbles (INT)

**Database and Software Decisions**

We have decided to use a Microsoft SQL database for our project. We are also planning on writing the back-end of our program in C#. The front-end of our program will just be styled with HTML and CSS. If we need any logic in the front-end, we will be using JavaScript.

**Data**

We will be getting data from tools we found on GitHub. These libraries are called nflgame\* and nfldb\*. We plan on writing a program that utilizes these libraries to gather the data and properly format it, so we can easily insert it into our database. This will be one of our advanced functions because of our need to write this program to pull and properly format the data for our database.

**Task Division**

For the time being, our plan for the division of labor goes as follows, Nathan will work on writing most of the basic functions for database manipulation. Matt will work on creating the database and writing the program to gather and insert data. After these tasks are completed, we will be working together on writing the advanced functions. We also plan on splitting up any work that will come up after this evenly, with Matt focusing more on the front-end development and Nathan focusing more on the back-end.

**Timeline**

We have outlined a basic timeline for the work we plan on doing. First, we plan on writing queries to create our database. We then plan our writing the basic functions to manipulate our database including ways to insert, edit and delete editable tables. We will then work on writing the program to gather our data and properly insert it into our database in a semi-automated fashion. Next, we will start working on the front-end of our application along with adding ways to call our basic functions from the front-end. After we get the basic part of our application done and ready to demo, we will begin implementing our more advanced functions and adding more user-friendly style to our application's front-end. This should complete the work we plan on doing in the scope of this project.

**Links**

* <https://github.com/BurntSushi/nflgame>
* <https://github.com/BurntSushi/nfldb>