

Fantasy Football Database

Table of Contents

[Part One 3](#_Toc108557333)

[Summary 3](#_Toc108557334)

[Stakeholders 3](#_Toc108557335)

[Business Rules 3](#_Toc108557336)

[Data Questions 3](#_Toc108557337)

[Conceptual Model 4](#_Toc108557338)

[Logical Model 4](#_Toc108557339)

[Part Two 5](#_Toc108557340)

[Data Definition Language – Creating Tables and Constraints 5](#_Toc108557341)

[Data Manipulation Language 6](#_Toc108557342)

[Adding Data using INSERT Statements 6](#_Toc108557343)

[Querying Data Using SELECT Statements 6](#_Toc108557344)

[Programming Objects 7](#_Toc108557345)

[User Interface 7](#_Toc108557346)

[Reflection 9](#_Toc108557347)

# Part One

## Summary

Fantasy football has grown tremendously over the past decade. People from all over the United States and world have started leagues of varies sizes, skill levels, and competitiveness. Statistics has become one of the best ways to help with a successful fantasy football season. Whether playing in a neighborhood league with friends or in tournaments for thousands of dollars having good and accurate statistics in key to performing well.

## Stakeholders

* Current Fantasy Football Players
  + People who currently play fantasy football and want to get more information about players
* Possible Future Fantasy Football Players
  + People who do not currently play fantasy football and are interested in learning more about the stats behind it before playing

## Business Rules

* A player can only play for one team at a time
* Players can play for multiple years and for multiple teams
* A player can only be eligible for one position
* Players can put up stats in whatever statistical category regardless of position.

## Data Questions

* Which players scored the most touchdowns by position?
* What player did the best for a stat?
* How many players did a team have of a certain position?
* Which teams scored the most touchdowns?

## Conceptual Model

Diagram

Description automatically generated

## Logical Model

Diagram

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# Part Two

## Data Definition Language – Creating Tables and Constraints

/\*

Author : David Parsons

Course : IST659 M402

Term : July 2022

\*/

/\* Drop Tables \*/

DROP TABLE IF EXISTS PlayerVBD

DROP TABLE IF EXISTS PlayerScoring

DROP TABLE IF EXISTS FantasyLeague

DROP TABLE IF EXISTS PlayerSeasonList

DROP TABLE IF EXISTS Player

DROP TABLE IF EXISTS LeagueStarter

DROP TABLE IF EXISTS ScoringSystem

DROP TABLE IF EXISTS Season

DROP TABLE IF EXISTS Team

DROP TABLE IF EXISTS Position

/\* Create Tables \*/

CREATE TABLE Position (

PositionID int identity primary key,

PositionName varchar(2) not null unique

)

CREATE TABLE Team (

TeamID int identity primary key,

TeamAbbreviation varchar(3) not null unique,

City varchar(20) not null,

TeamName varchar(20) not null unique

)

CREATE TABLE Season (

SeasonID int identity primary key,

Year int not null unique

)

CREATE TABLE Player (

PlayerID int identity primary key,

FirstName varchar(20) not null,

LastName varchar(20) not null,

TeamID int not null foreign key references Team(TeamID),

SeasonID int not null foreign key references Season(SeasonID),

PositionID int not null foreign key references Position(PositionID),

PassCompletion int,

PassAttempt int,

PassYard int,

PassTD int,

Interception int,

RushingAttempt int,

RushYard int,

RushTD int,

Target int,

Reception int,

RecievingYard int,

ReceivingTD int,

FumbleLost int,

TwoPointScore int,

FantasyPoints decimal(5,2),

VBD int

)

/\* Insert Statements \*/

INSERT INTO Position (PositionName) VALUES

('QB'),

('RB'),

('WR'),

('TE')

INSERT INTO Team (TeamAbbreviation, City, TeamName) VALUES

('BAL', 'Baltimore', 'Ravens'),

('PIT', 'Pittsburgh', 'Steelers'),

('CIN', 'Cincinnati', 'Bengals'),

('CLE', 'Cleveland', 'Browns'),

('KCC', 'Kansa City', 'Chiefs'),

('DEN', 'Denver', 'Broncos'),

('LVR', 'Las Vegas', 'Raiders'),

('LAC', 'Los Angeles', 'Chargers')

INSERT INTO Season (Year) VALUES

(2021),

(2020),

(2019)

INSERT INTO Player (FirstName, LastName, TeamID, SeasonID, PositionID,

PassCompletion, PassAttempt, PassYard, PassTD, Interception, RushingAttempt, RushYard, RushTD, Target, Reception, RecievingYard, ReceivingTD, FumbleLost, TwoPointScore) VALUES

('Lamar', 'Jackson',

(SELECT TeamID FROM Team WHERE TeamName = 'Ravens'),

(SELECT SeasonID FROM Season WHERE Year = 2021),

(SELECT PositionID FROM Position WHERE PositionName = 'QB'),

25, 45, 471, 5, 1, 10, 142, 1, 0, 0, 0, 0, 0, 0),

('Najee', 'Harris',

(SELECT TeamID FROM Team WHERE TeamName = 'Steelers'),

(SELECT SeasonID FROM Season WHERE Year = 2021),

(SELECT PositionID FROM Position WHERE PositionName = 'RB'),

0, 0, 0, 0, 0, 31, 89, 1, 8, 6, 34, 1, 0, 0),

('Jamaar', 'Chase',

(SELECT TeamID FROM Team WHERE TeamName = 'Bengals'),

(SELECT SeasonID FROM Season WHERE Year = 2021),

(SELECT PositionID FROM Position WHERE PositionName = 'WR'),

0, 0, 0, 0, 0, 0, 0, 0, 21, 17, 234, 2, 0, 0),

('David', 'Njoku',

(SELECT TeamID FROM Team WHERE TeamName = 'Browns'),

(SELECT SeasonID FROM Season WHERE Year = 2021),

(SELECT PositionID FROM Position WHERE PositionName = 'TE'),

0, 0, 0, 0, 0, 0, 0, 0, 10, 7, 134, 0, 0, 0),

('Justin', 'Herbert',

(SELECT TeamID FROM Team WHERE TeamName = 'Chargers'),

(SELECT SeasonID FROM Season WHERE Year = 2021),

(SELECT PositionID FROM Position WHERE PositionName = 'QB'),

41, 60, 531, 6, 1, 4, 14, 0, 0, 0, 0, 0, 0, 0),

('Melvin', 'Gordon',

(SELECT TeamID FROM Team WHERE TeamName = 'Broncos'),

(SELECT SeasonID FROM Season WHERE Year = 2021),

(SELECT PositionID FROM Position WHERE PositionName = 'RB'),

0, 0, 0, 0, 0, 24, 114, 1, 5, 5, 54, 0, 0, 0),

('Davante', 'Adams',

(SELECT TeamID FROM Team WHERE TeamName = 'Raiders'),

(SELECT SeasonID FROM Season WHERE Year = 2021),

(SELECT PositionID FROM Position WHERE PositionName = 'WR'),

0, 0, 0, 0, 0, 0, 0, 0, 25, 20, 187, 2, 0, 0),

('Travis', 'Kelce',

(SELECT TeamID FROM Team WHERE TeamName = 'Chiefs'),

(SELECT SeasonID FROM Season WHERE Year = 2021),

(SELECT PositionID FROM Position WHERE PositionName = 'TE'),

0, 0, 0, 0, 0, 0, 0, 0, 24, 18, 167, 3, 0, 0),

('Lamar', 'Jackson',

(SELECT TeamID FROM Team WHERE TeamName = 'Ravens'),

(SELECT SeasonID FROM Season WHERE Year = 2020),

(SELECT PositionID FROM Position WHERE PositionName = 'QB'),

25, 45, 471, 5, 1, 10, 142, 1, 0, 0, 0, 0, 0, 0),

('Najee', 'Harris',

(SELECT TeamID FROM Team WHERE TeamName = 'Steelers'),

(SELECT SeasonID FROM Season WHERE Year = 2020),

(SELECT PositionID FROM Position WHERE PositionName = 'RB'),

0, 0, 0, 0, 0, 31, 89, 1, 8, 6, 34, 1, 0, 0),

('Jamaar', 'Chase',

(SELECT TeamID FROM Team WHERE TeamName = 'Bengals'),

(SELECT SeasonID FROM Season WHERE Year = 2020),

(SELECT PositionID FROM Position WHERE PositionName = 'WR'),

0, 0, 0, 0, 0, 0, 0, 0, 21, 17, 234, 2, 0, 0),

('David', 'Njoku',

(SELECT TeamID FROM Team WHERE TeamName = 'Browns'),

(SELECT SeasonID FROM Season WHERE Year = 2020),

(SELECT PositionID FROM Position WHERE PositionName = 'TE'),

0, 0, 0, 0, 0, 0, 0, 0, 10, 7, 134, 0, 0, 0),

('Justin', 'Herbert',

(SELECT TeamID FROM Team WHERE TeamName = 'Chargers'),

(SELECT SeasonID FROM Season WHERE Year = 2020),

(SELECT PositionID FROM Position WHERE PositionName = 'QB'),

41, 60, 531, 6, 1, 4, 14, 0, 0, 0, 0, 0, 0, 0),

('Melvin', 'Gordon',

(SELECT TeamID FROM Team WHERE TeamName = 'Broncos'),

(SELECT SeasonID FROM Season WHERE Year = 2020),

(SELECT PositionID FROM Position WHERE PositionName = 'RB'),

0, 0, 0, 0, 0, 24, 114, 1, 5, 5, 54, 0, 0, 0),

('Davante', 'Adams',

(SELECT TeamID FROM Team WHERE TeamName = 'Raiders'),

(SELECT SeasonID FROM Season WHERE Year = 2020),

(SELECT PositionID FROM Position WHERE PositionName = 'WR'),

0, 0, 0, 0, 0, 0, 0, 0, 25, 20, 187, 2, 0, 0),

('Travis', 'Kelce',

(SELECT TeamID FROM Team WHERE TeamName = 'Chiefs'),

(SELECT SeasonID FROM Season WHERE Year = 2020),

(SELECT PositionID FROM Position WHERE PositionName = 'TE'),

0, 0, 0, 0, 0, 0, 0, 0, 24, 18, 167, 3, 0, 0)

### Querying Data Using SELECT Statements

-- SELECT Statements

-- SELECT Top 10 Passing QBs

SELECT TOP 10 \*

FROM Player

ORDER BY Player.PassYard DESC

Table

Description automatically generated

-- Double digit Receiving TDs in 2020

SELECT FirstName, LastName, Season.Year, ReceivingTD, Position.PositionName

FROM Player

JOIN Season ON Season.SeasonID = Player.SeasonID

JOIN Position ON Position.PositionID = Player.PositionID

WHERE ReceivingTD >= 10 AND Season.Year = '2020'

ORDER BY ReceivingTD DESC, LastName

Table

Description automatically generated

-- Total QBs for the Ravens in 2019

SELECT

COUNT(Player.PlayerID) AS TotalRavenQBs

FROM Player

JOIN Team ON Team.TeamID = Player.TeamID

JOIN Position ON Position.PositionID = Player.PositionID

JOIN Season ON Season.SeasonID = Player.SeasonID

WHERE Team.TeamName = 'Ravens' AND Season.Year = '2019' AND Position.PositionName = 'QB'

Graphical user interface, table

Description automatically generated

-- Rushing TDs by Team in 2021

SELECT Team.TeamName,

SUM(Player.RushTD) AS RushTD\_Total

FROM Team

JOIN Player ON Player.TeamID = Team.TeamID

JOIN Season ON Season.SeasonID = Player.SeasonID

WHERE Season.Year = '2021'

GROUP BY

Team.TeamName

ORDER BY RushTD\_Total DESC

Table

Description automatically generated

## User Interface

Add Team

Table

Description automatically generated

Add Team

Table

Description automatically generated

Player Change Team

Graphical user interface, table

Description automatically generated

## Reflection

The next database that I create I would try to get a better idea of what I am trying to make. For this database I originally had a lot I wanted to that I thought required very complicated database structure. It turned out to need very complex SELECT statements. This caused extra coding that I did not need. I think it was because when starting this course my knowledge of what all I could do in a SELECT statement was there yet. Once we went over what all can be done it made me realize that some of the more complex math thing, I wanted to do was not the best idea with intermediary tables. So next time I will have a better understanding of what can and should be done when designing the database so I can avoid overcomplicating it as much as I did early on with this one.