



College basketball stats

Group 6:

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Project description

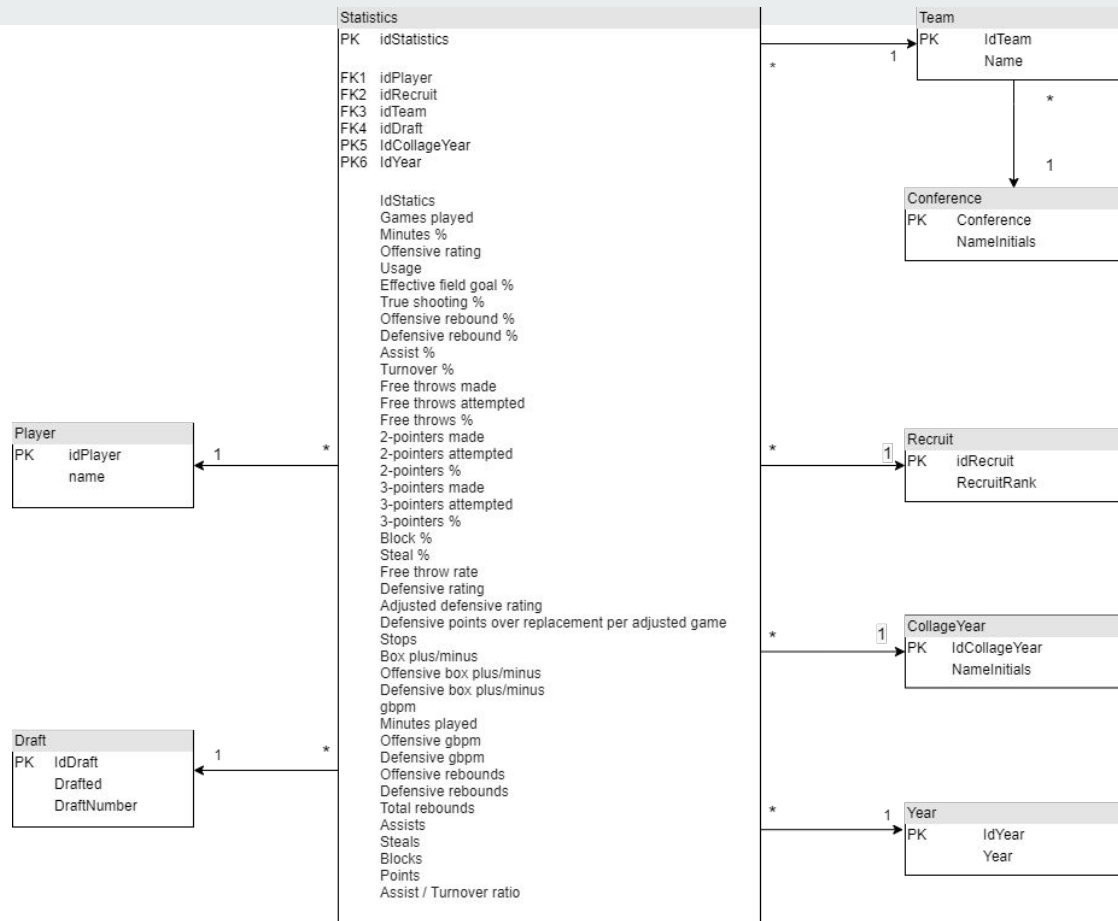
In this work we create a final product that can be used by selectors of university teams for more informed decisions regarding future hiring. In addition, the final product can provide an overview of the performance of teams and players for basketball enthusiasts and team coordinators. Our data relates to College Basketball between the years 2009 and 2021 and includes advanced NBA statistics. Each stat is associated with a player and a year. The dataset consists of 61061 facts and the combination (player, year) is unique for all facts.



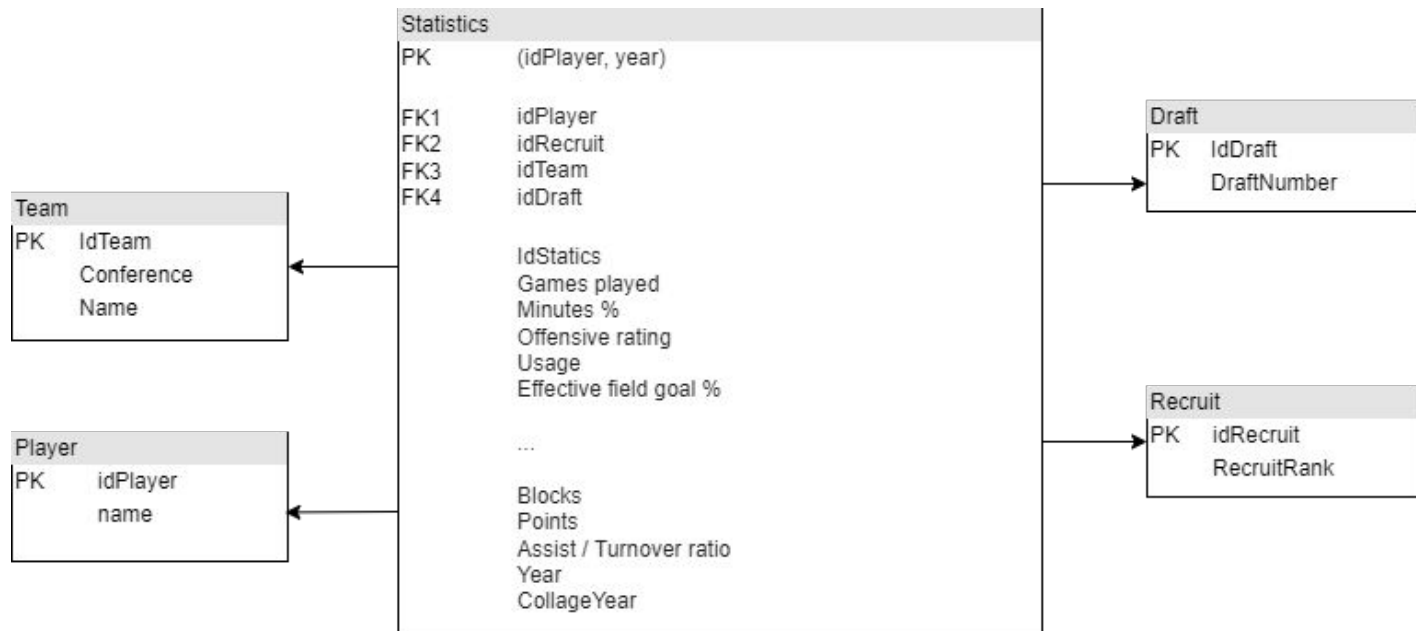
Dimensional Bus Matrix

Dimensões	Ano	Ano de escolaridade	Equipa	Conferência	Draft Number	Recruit Rank	Estatísticas
Estatísticas dos jogadores que foram drafted	x	x	x	x		x	x
Estatísticas dos jogadores que foram recrutados	x	x	x	x	x		x
Estatísticas dos jogadores por conferencia	x	x	x		x	x	x
Estatísticas dos jogadores por ano		x	x	x	x	x	x
Estatísticas dos jogadores por ano de escolaridade	x		x	x	x	x	x

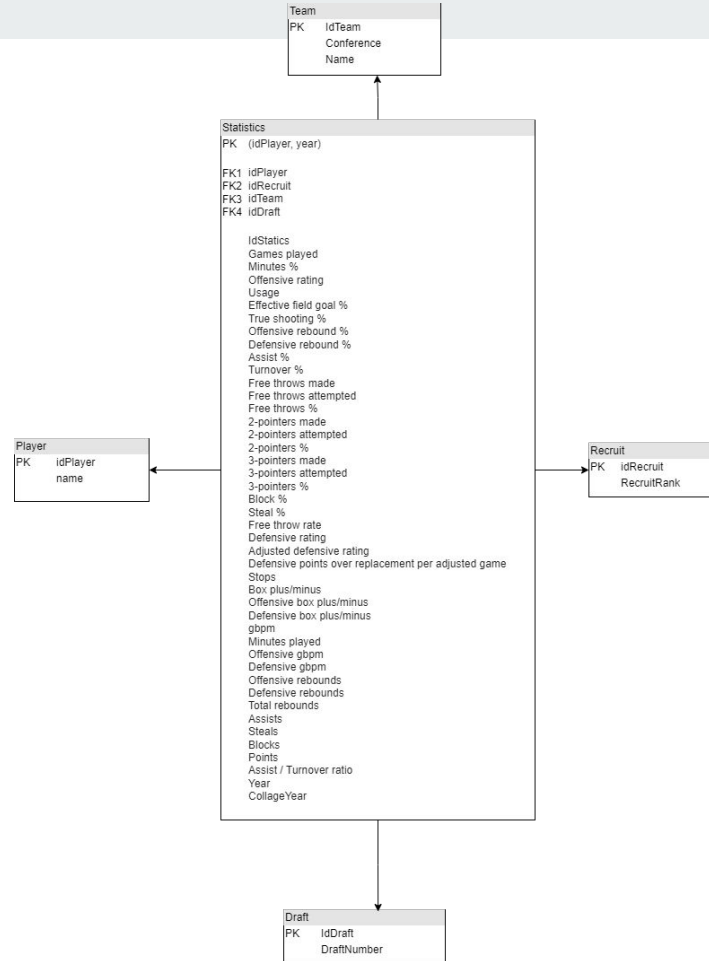
MultiDim Conceptual model



Simplified star schema

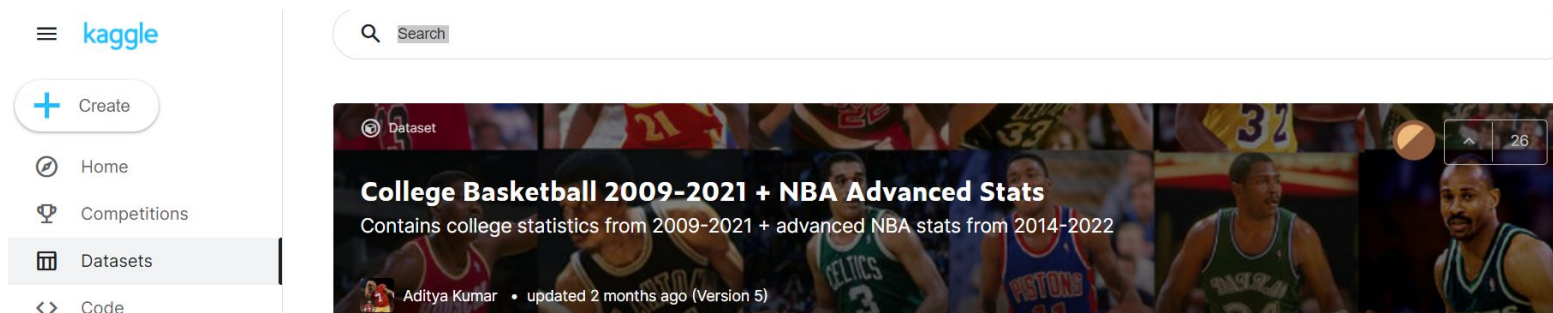


Star scheme



Data source model

This project contains a single data source: the “College Basketball 2009-2021 + NBA Advanced Stats” dataset from kaggle.com. This data contains some simpler statistics like points, blocks, etc. However, the data also contains some more advanced statistics that employ complicated equations such as offensive rating and PORPAG. There are stats for the years 2009 to 2021. Each player has a maximum of one stat in each year.



The screenshot shows the Kaggle interface. On the left is a sidebar with the Kaggle logo, a 'Create' button, and navigation links for Home, Competitions, Datasets (which is highlighted), and Code. The main content area features a search bar at the top. Below it is a banner for the dataset 'College Basketball 2009-2021 + NBA Advanced Stats' by Aditya Kumar. The banner includes a 'Dataset' label, a description 'Contains college statistics from 2009-2021 + advanced NBA stats from 2014-2022', and a background image of basketball players. A user profile icon and a version indicator '26' are also visible in the top right of the banner area.

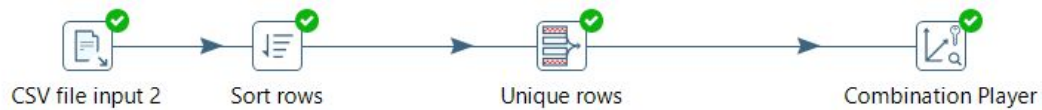
Dataset

College Basketball 2009-2021 + NBA Advanced Stats

Contains college statistics from 2009-2021 + advanced NBA stats from 2014-2022

Aditya Kumar • updated 2 months ago (Version 5)

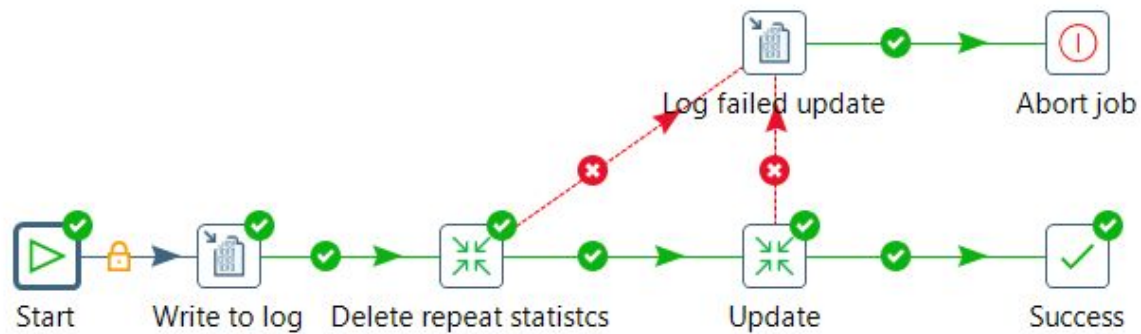
Transformations



Auxiliary transformation

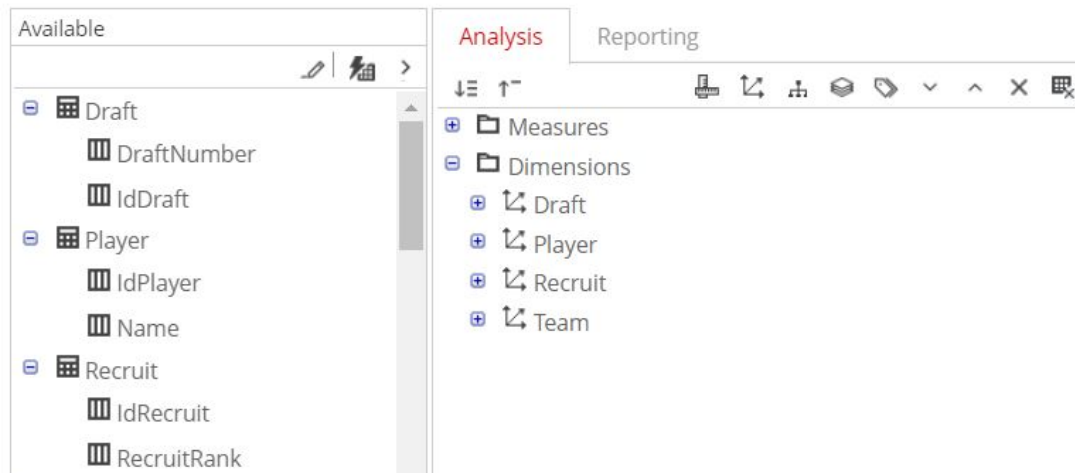


Job



Multi-dimensional modeling

Data Source Model Editor



Multi-dimensional modeling: Dimensions

The image displays two side-by-side screenshots of the SQL Server Data Tools (SSDT) interface, illustrating the structure of a multi-dimensional model. The left screenshot shows the 'Analysis' tab, and the right screenshot shows the 'Reporting' tab. Both views feature a tree structure of dimensions and measures, with a 'Properties' pane on the right.

Left Screenshot (Analysis Tab):

- Measures:**
 - Draft
 - DraftNumber
 - IdDraft
 - Player
 - IdPlayer
 - Name
 - Recruit
 - IdRecruit
 - RecruitRank

Right Screenshot (Reporting Tab):

- Available:**
 - Draft
 - DraftNumber
 - IdDraft
 - Player
 - IdPlayer
 - Name
 - Recruit
 - IdRecruit
 - RecruitRank
 - Statics
 - AdjustedDefensiveRating
 - AssistOrTurnoverRatio
 - AssistPercentage
 - Assists
- Dimensions:**
 - IdPlayer
 - Name
 - Recruit
 - IdRecruit
 - RecruitRank
 - Team
 - Conference
 - IdTeam
 - Name

Multi-dimensional modeling: Measures

The image displays three screenshots of a Business Intelligence (BI) tool interface, likely Microsoft Power BI, showing the 'Measures' and 'Dimensions' sections of a data model. Each screenshot has a tabbed interface with 'Analysis' and 'Reporting' tabs.

Left Screenshot (Measures):

- AdjustedDefensiveRating
- AssistOrTurnoverRatio
- AssistPercentage
- Assists
- BlockInPercentage
- Blocks
- BoxPplusOrminus
- DefensiveBoxPlusOrminus
- DefensiveGbp
- DefensivePointsOverReplacementPerAdjustedGar
- DefensiveRating
- DefensiveReboundPercentage
- DefensiveRebounds

Middle Screenshot (Measures):

- DefensiveRebounds
- EffectiveFieldGoalPercentage
- FreeThrowRate
- FreeThrowsAttempted
- FreeThrowsMade
- FreeThrowsPercentage
- GamesPlayed
- Gbp
- IdDraft
- IdPlayer
- IdRecruit
- IdTeam
- MinutesInPercentage
- MinutesPlayed
- MinutesPlayed
- OffensiveBoxPlusOrminus
- OffensiveGbp
- OffensiveRating
- OffensiveReboundPercentage
- OffensiveRebounds
- Points
- StealPercentage
- Steals
- Stops
- ThreePointersAttempted
- ThreePointersMade
- ThreePointersPercentage
- TotalRebounds

Right Screenshot (Measures):

- ThreePointersPercentage
- TotalRebounds
- TruesShootingPercentage
- TurnoverPercentage
- TwoPointersAttempted
- TwoPointersMade
- TwoPointersPercentage
- UsageStat
- Year

Dimensions:

- Draft
- Player
- Recruit
- Team



Dashboard

It is divided into 3 parts:

- The stats of a player
- The stats of a team
- And the best players in a conference



Dashboard Features

The Dashboard's main features are:

- Select a player and view their stats
- Select a team and view its stats
- Select a conference and view its statistics
- Allow comparisons between these elements

DashBoard - Player

Player Statistics

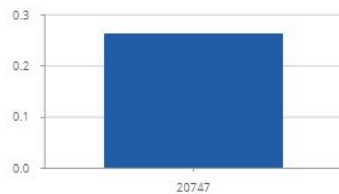
AJ Edu ▼

Cal St. Northridge ▼

BW ▼

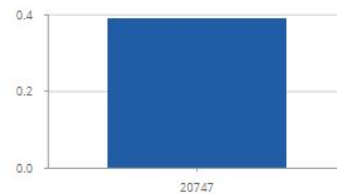
Player_Steals

Steals



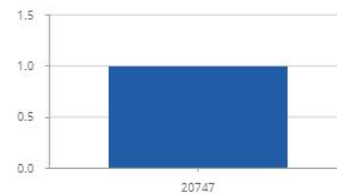
Player_blocks

Blocks



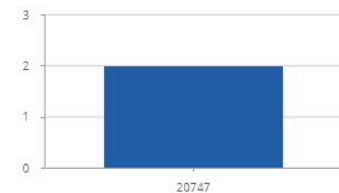
Player_points

Points



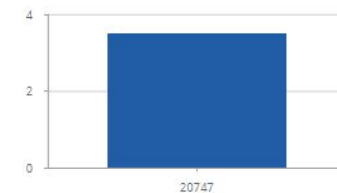
Player_2_pointers

TwoPointersMade



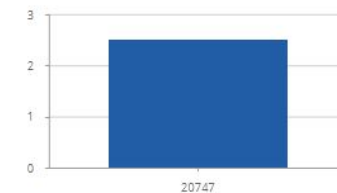
Player_3_pointers

ThreePointersMade



Player_free_trows

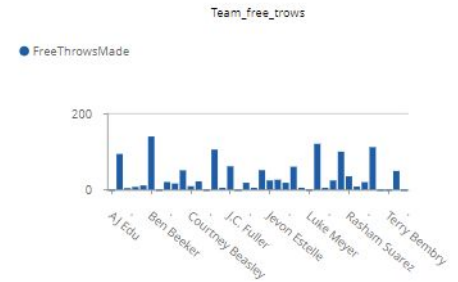
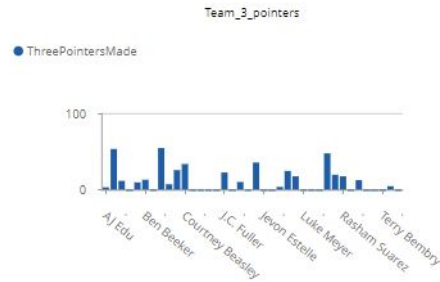
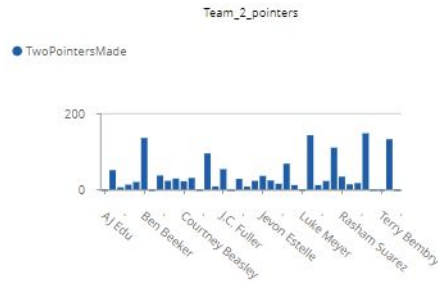
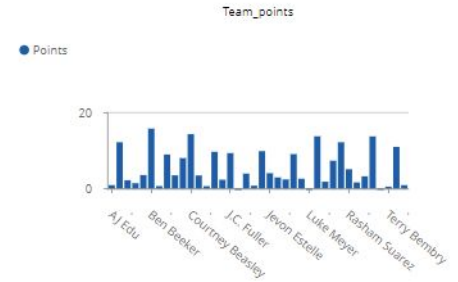
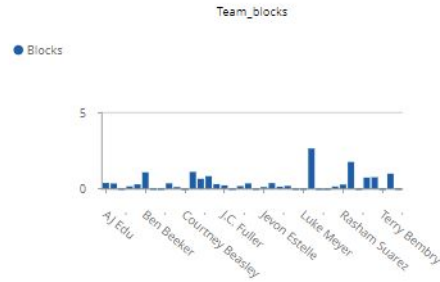
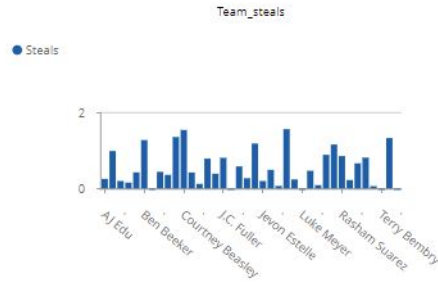
FreeThrowsMade



DashBoard - Team

Team Statistics

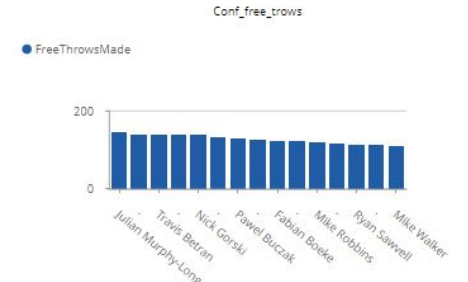
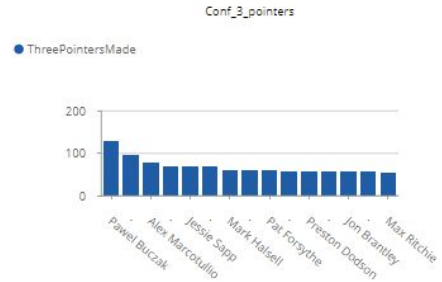
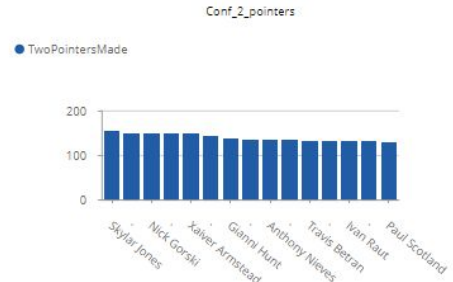
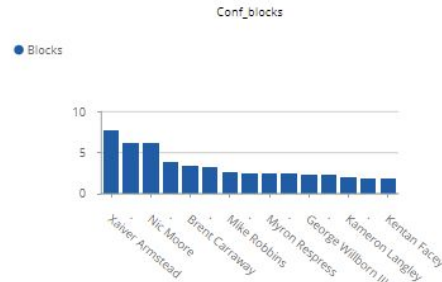
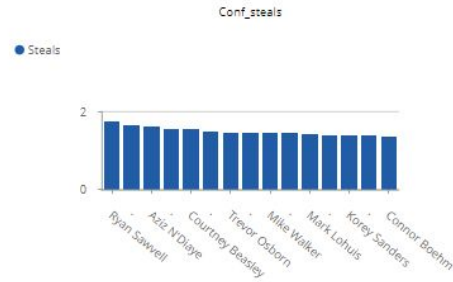
Cal St. Northridge ▼



Conference Statistics

DashBoard - Conference

BW ▼





Conclusions

This project had different components, namely the creation of a Data warehouse, ETL processes, MDX queries and a Dashboard. The dashboard created shows several interesting statistics regarding College Basketball between the years 2009 and 2021 including advanced NBA statistics. All components of the project were successfully completed, obtaining a functional and interesting product.



Questions?