

Driver & Interface Adapter

AppState

- Serializable Class that will store all of the current matches members
- Can be loaded and unloaded to save and reload a fantasy league's data

Parent: None

Subclasses: None

Layer: Interface Adapters

Relationships:

- SportsApp

DataContainer (Interface)

- DataContainer's subclasses will contain the data on players and teams
- When the app starts, data container subclass will be empty. Then, when a command is ran, it will check if it has the appropriate data, if not, it will load it in and save it, and if it does, it will just pass it right away

Parent: None

Subclasses: CSVDataContainer

Layer: Interface Adapters

Relationships:

- SportsApp
- CSVDataContainer

CSVDataContainer

- Loads the necessary data from a CSV file
- Implements the methods set by the DataContainer interfaces: getPlayer and getTeam

Parent: DataContainer
Subclasses: None
Layer: Interface Adapaters

Relationships:

- DataContainer

SportsApp

- Starting point of the app
- Prints starting instructions for the user to follow
- Accepts input from the user and passes it to the CommandManager
- Prints out the output received from the CommandManager

Parent: None

Subclasses: None

Layer: Framework & Drivers

Relationships:

- CommandManager

CommandManager

- Parses the input string into a command and its arguments
- Identifies the command and passes it to an appropriate object

Parent: None

Subclasses: None

Layer: Interface Adapter

Relationships:

- InputParser
- PlayerStatManagerFacade
- PlayerStatComparerFacade
- PlayerStatPredictorFacade
- TeamStatManager
- TeamStatComparer
- TeamStatPredictor
- LeagueMemberManager

InputParser

- The class is responsible for parsing the user's input and extracting the arguments out of the input
- It will store the keyword command and the arguments for the command separately

Parent: None

Subclasses: None

Layer: Interface Adapter

- CommandManager

Related to Teams

TeamStatManager

- Find or compute statistics about a given Team

Parent: None
Subclasses: None
Layer: Use Case

- TeamManager
- Team

TeamStatComparer

- Compare two or more Teams on a given statistic

Parent: None
Subclasses: None
Layer: Use Case

- TeamStatManager

TeamStatPredictor

- Given a Team has a past record for a statistic, predict their future performance on that statistic

Parent: None
Subclasses: None
Layer: Use Case

- TeamStatManager

Team (Abstract)

- Store a team's name, home city, players, number of games played, number of wins, number of losses, number of ties, and rank
- Getters and Setters for above

Parent: None
Subclasses: HockeyTeam,
TennisTeam
Layer: Entity

- None

HockeyTeam

- Store the information specified in team class
- Also stores goals for, goals against, face off win percentage, shots for, shots against, regulation wins, regulation plus overtime wins, shootout games won, and overtime losses
- Getters and Setters for above

Parent: Team
Subclasses: None
Layer: Entity

- TeamManager

TennisTeam

- Store the information specified in team class
- Also stores total tournaments played, tournament wins
- Getters and Setters for above

Parent: Team
Subclasses: None
Layer: Entity

- TeamManager

BaseballTeam

- Store the information specified in team class
- Also stores games started, complete games, shutouts, saves, save opportunities, innings pitched, hits allowed, runs allowed, earned runs, home runs allowed, hit batsmen, at bats, runs, hits, doubles, triples, home runs, run batted in, walks, strikeouts, stolen bases, caught stealing
- Getters and Setters for above

Parent: Team

Subclasses: None

Layer: Entity

- TeamManager

TeamManager

- Store Teams, with getter (for Use Cases to resolve argument name into Team object)
- Create and record new Teams

Parent: None
Subclasses: None
Layer: Entity

- Team

Related to Members & Betting

LeagueMemberManager

- Create and record the Members in the fantasy league
- Create and record the ongoing Matches
- Notify stored Matches when a Member bets on them or when their outcome is resolved

Parent: None
Subclasses: None
Layer: Use Case

- Member
- Match

LeagueMember

- Represent a Member of a fantasy league, who bets on games
- Stores the Member's name
- Tracks the amount of matches they have predicted correctly and incorrectly

Parent: None
Subclasses: None
Layer: Entity

- None

Match

- Store the two teams who are competing in the match
- Getters and setters for above
- Record and store which Members have bet on which outcomes of the match
- After the match ends, update players who bet correctly and who bet incorrectly

Parent: None
Subclasses: None
Layer: Entity

- MemberManager

Related to Players

PlayerStatManager

- Abstract Class which is Superclass of each sports' concrete stat manager class
- Stores player list and list of stats which can be returned.

Parent: None

Subclasses:

HockeyPlayerStatManager,
TennisPlayerStatManager

Layer: Use Case

- None

PlayerStatManagerFacade

- Facade class which accepts an argument requesting a statistic, checks the sport requested, and passes the argument to the appropriate sport's StatManager

Parent: None

Subclasses: None

Layer: Use Case

- HockeyPlayerStatManager
- TennisPlayerStatManager
- BaseballPlayerStatManager

HockeyPlayerStatManager

- Return the value of a stat (or all stats), given a hockey player's name, a season name, and a stat
- Stats that can be reported are:
 - See HockeyPlayer card (any of the information being stored by HockeyPlayer can be reported)

Parent: PlayerStatManager

Subclasses: None

Layer: Use Case

- HockeyPlayer
- DataContainer

TennisPlayerStatManager

- Return the value of a stat (or all stats), given a tennis player's name, a tournament name, and a stat
- Stats that can be reported are:
 - See TennisPlayer card (any of the information being stored by TennisPlayer can be reported)

Parent: PlayerStatManager

Subclasses: None

Layer: Use Case

- TennisPlayer
- DataContainer

BaseballPlayerStatManager

- Return the value of a stat (or all stats), given a baseball player's name, a season, and a stat
- See BaseballPlayer card to see what stats can be reported

Parent: PlayerStatManager

Subclasses: None

Layer: Use Case

- BaseballPlayer
- DataContainer

PlayerStatComparer

- Abstract Class which is Superclass of each sports' concrete stat comparer class
- Stores player list and list of stats which can be compared.

Parent: None

Subclasses: HockeyPlayerStatComparer,
TennisPlayerStatComparer

Layer: Use Case

- None

PlayerStatComparerFacade

- Facade class which accepts an argument requesting comparison of statistics, checks the sport requested, and passes the argument to the appropriate sport's StatComparer

Parent: None

Subclasses: None

Layer: Use Case

- HockeyPlayerStatComparer
- TennisPlayerStatComparer
- BaseballPlayerStatComparer

HockeyPlayerStatComparer

- Compare two or more hockey players on a given statistic in a specific season
- Stats that can be compared:
 - number of games played
 - number of goals
 - number of assists
 - number of points
 - shooting percentage
 - number of shots

Parent: PlayerStatComparer

Subclasses: None

Layer: Use Case

- HockeyPlayer
- DataContainer

TennisPlayerStatComparer

- Compare two tennis players who participated in a competition based on a given stat
- Stats that can be compared are:
 - number of aces
 - number of double faults
 - number of serve points
 - number of first serves
 - number of break points saved

Parent: PlayerStatComparer

Subclasses: None

Layer: Use Case

- TennisPlayer
- DataContainer

BaseballPlayerStatComparer

- Compare multiple baseball players on a given stat for a season
- Statistics that can be compared are:
 - number of games played
 - number of at bats
 - number of runs
 - number of hits
 - number of home runs
 - number of runs batted in
 - number of strikeouts
 - average hits per bat

Parent: PlayerStatComparer

Subclasses: None

Layer: Use Case

- BaseballPlayer
- DataContainer

PlayerStatPredictor

- Abstract Class which is Superclass of each sports' concrete stat predictor class
- Stores player list and list of stats which can be predicted.

Parent: None
Subclasses: None
Layer: Use Case

- None

PlayerStatPredictorFacade

- Facade class which accepts an argument requesting prediction of statistic, checks the sport requested, and passes the argument to the appropriate sport's StatPredictor

Parent: None

Subclasses: None

Layer: Use Case

- HockeyPlayerStatPredictor
- TennisPlayerStatPredictor
- BaseballPlayerStatPredictor

HockeyPlayerStatPredictor

- Given a hockey player's name and a stat, predict their future statistic using linear regression
- Stats that can be predicted are:
 - number of games played
 - number of goals
 - number of assists
 - number of points
 - shooting percentage
 - number of shots

Parent: PlayerStatPredictor

Subclasses: None

Layer: Use Case

- HockeyPlayer
- DataContainer

TennisPlayerStatPredictor

- Given a tennis' player's name and stat, predict their future statistic with linear regression
- Stats that can be predicted are:
 - number of aces
 - number of double faults
 - number of serve points
 - number of first serves
 - number of break points saved

Parent: PlayerStatPredictor

Subclasses: None

Layer: Use Case

- TennisPlayer
- TennisPlayerList

BaseballPlayerStatPredictor

- Given a baseball player's name and stat, predict their future statistic with linear regression
- Stats that can be predicted are:
 - number of games played
 - number of at bats
 - number of runs
 - number of hits
 - number of home runs
 - number of runs batted in
 - number of strikeouts
 - average hits per bat

Parent: PlayerStatPredictor

Subclasses: None

Layer: Use Case

- BaseballPlayer
- DataContainer

Player (Abstact)

- Store player's name
- Getter and setter for above

Parent: None
Subclasses: HockeyPlayer
Layer: Entity

- None

HockeyPlayer

- Store the season, position, number of games played, number of goals, number of assists, number of points, shooting percentage, number of shots, and skater shoots

Parent: HockeyPlayer

Subclasses: None

Layer: Entity

- None

TennisPlayer

- Store a tennis player's:
 - age
 - nationality (represented by the 3 letter IOC code for their country)
 - number of aces
 - number of double faults
 - number of first serves
 - number of serve points
 - number of break points saved
- Getter and setters for above

Parent: Player
Subclasses: None
Layer: Entity

- None

BaseballPlayer

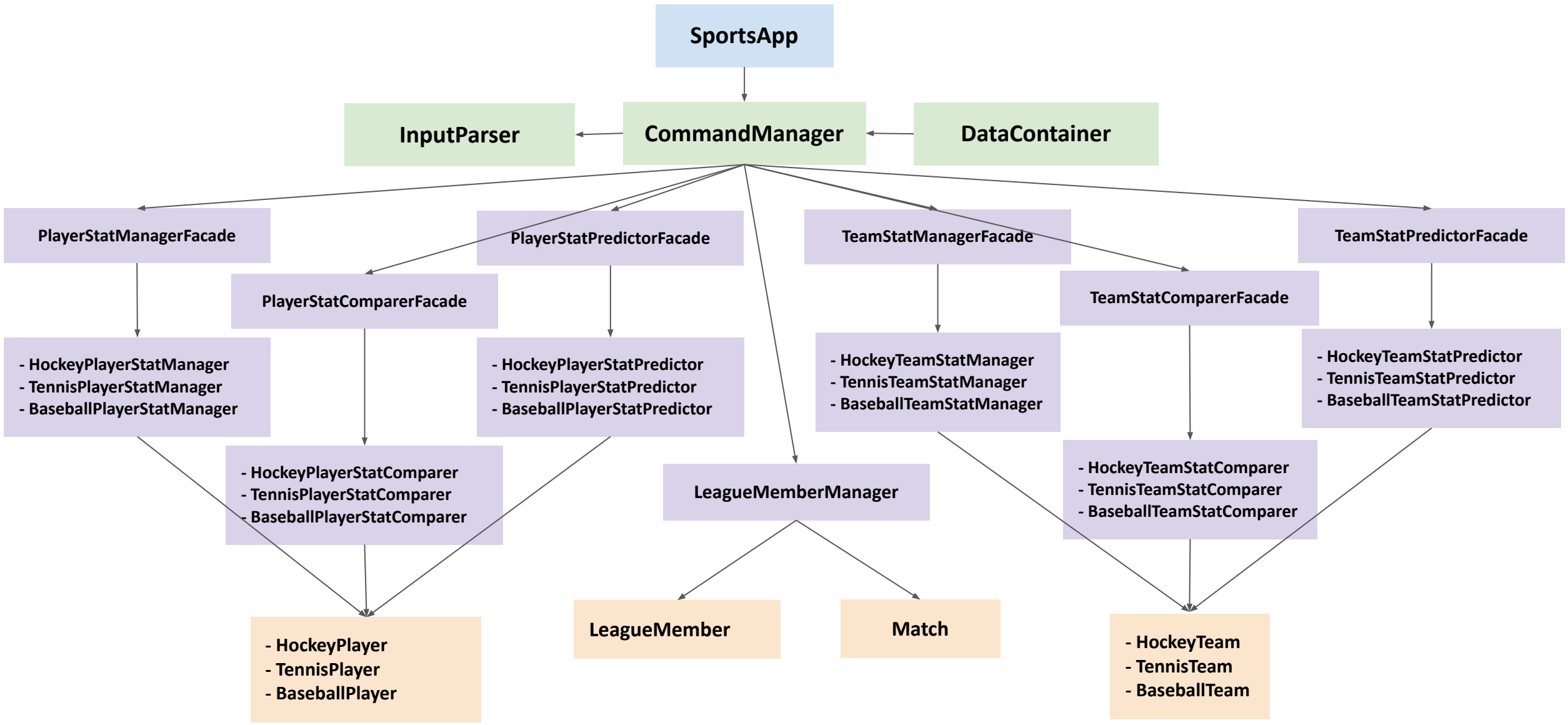
- For all seasons, store a baseball player's:
 - position
 - games played
 - bats
 - runs
 - hits
 - home runs
 - runs batted in
 - strike outs
 - average hits per at bat
- Getter and setters for above

Parent: Player
Subclasses: None
Layer: Entity

- None

- Framework and Drivers
- Interface Adapters
- Use Cases
- Entities

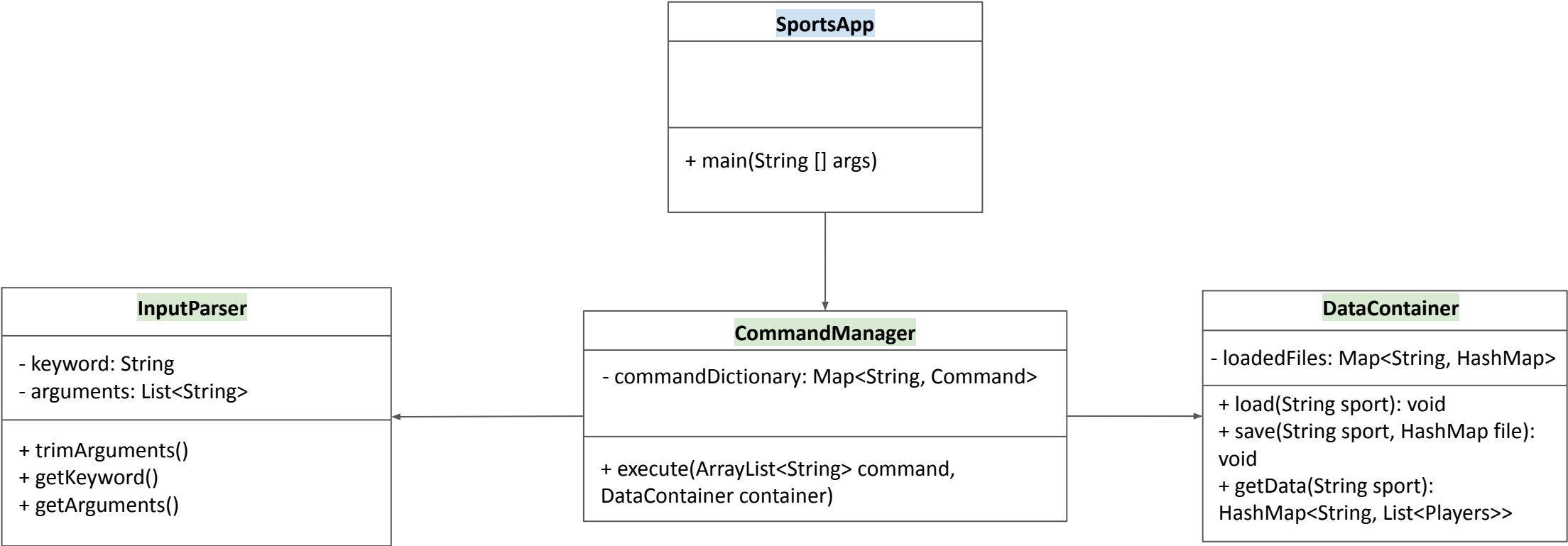
Simplified Class Diagram



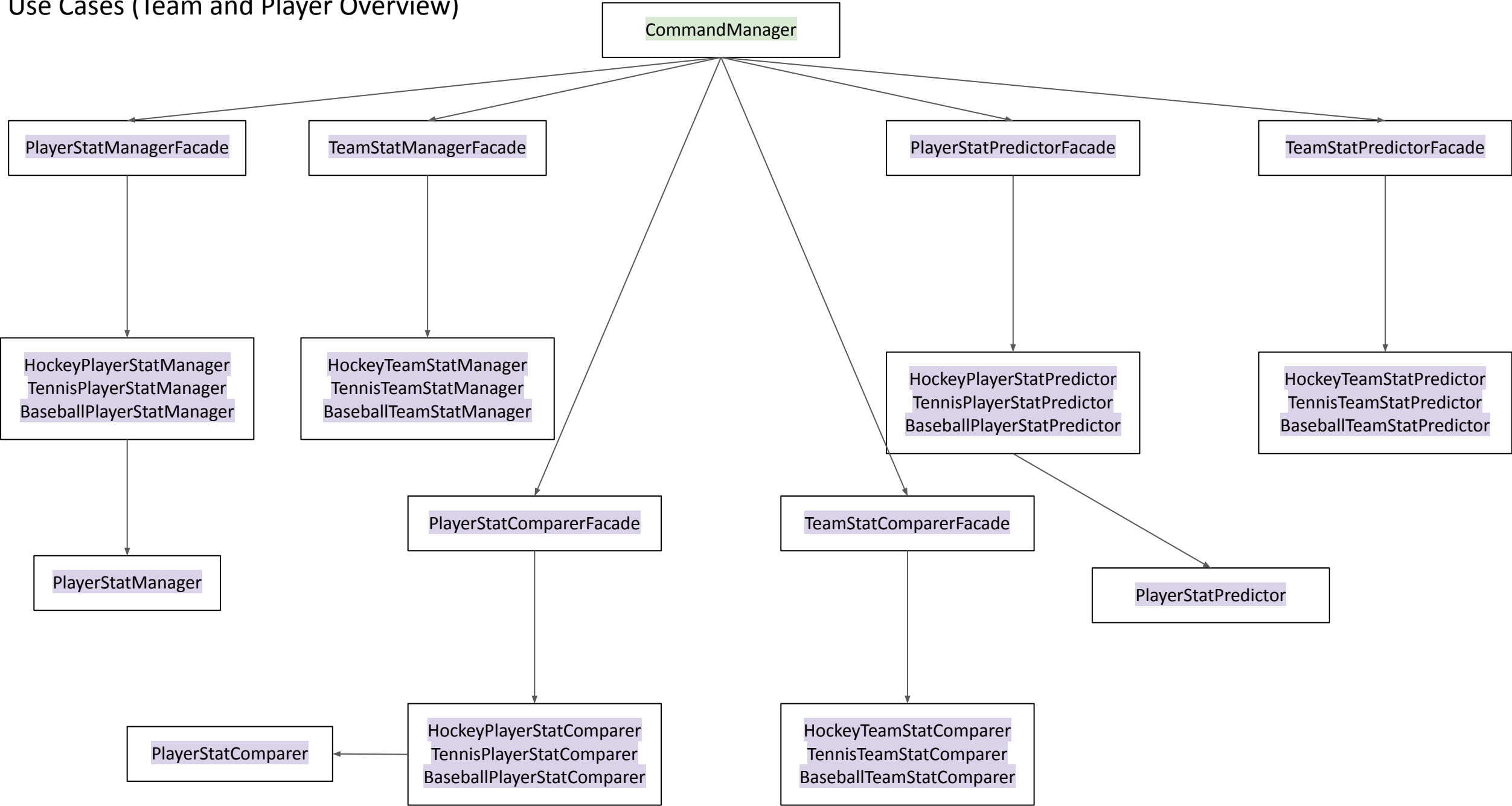
- Framework and Drivers
- Interface Adapters
- Use Cases
- Entities

Class Diagrams by Clean Architecture Layer

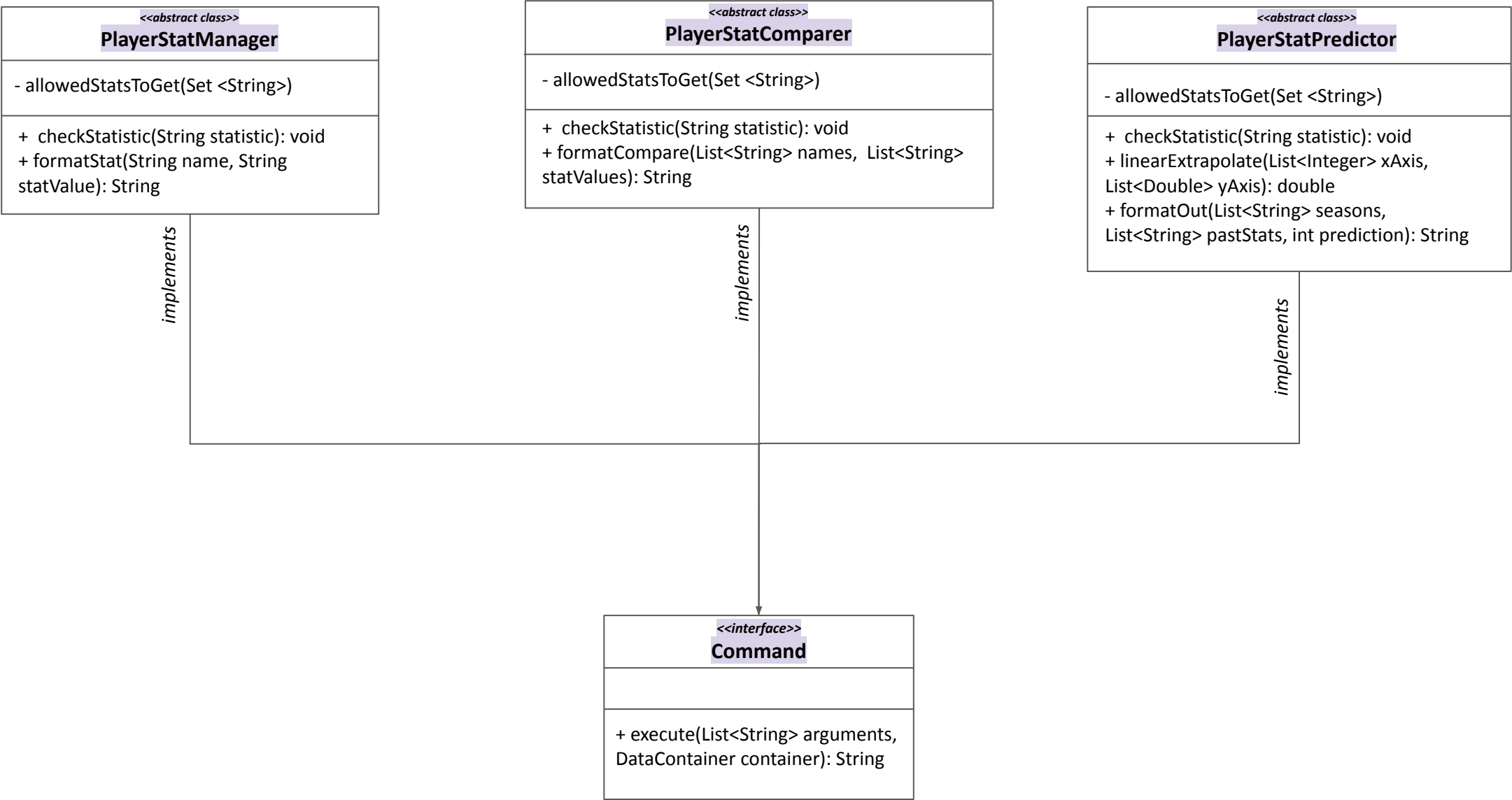
Frameworks & Drivers and Interface Adaptors



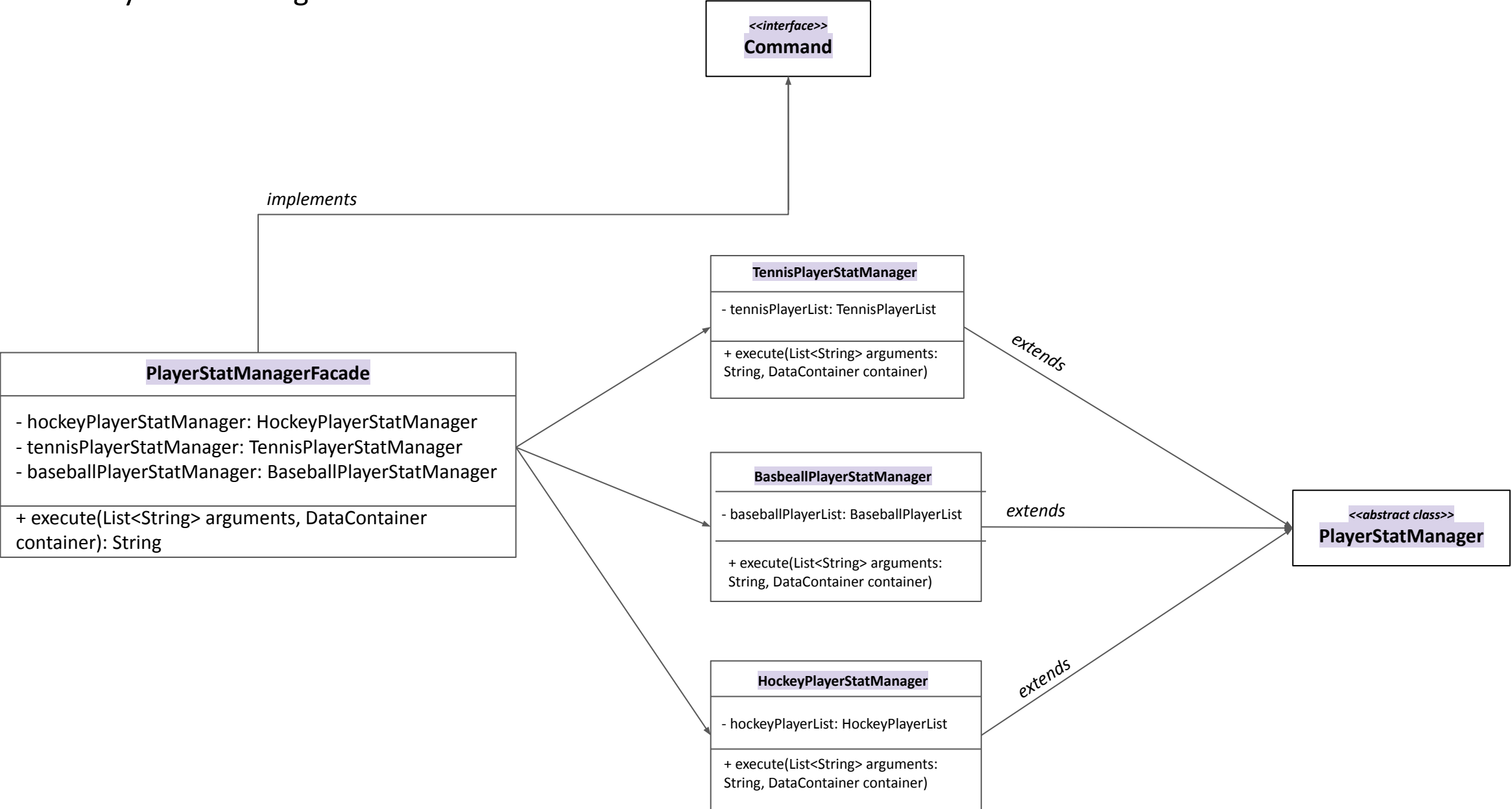
Use Cases (Team and Player Overview)



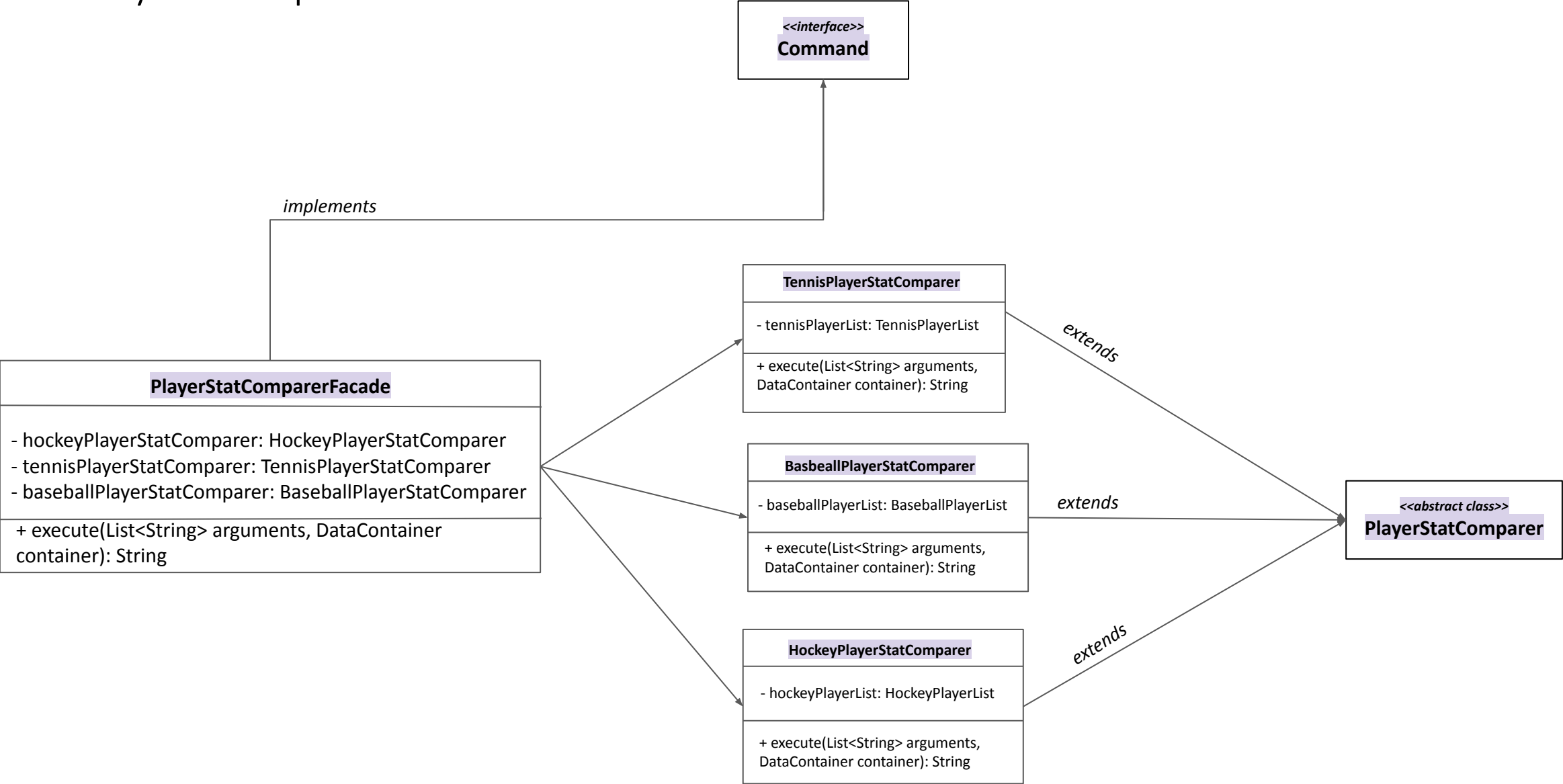
Use Cases - Abstract Classes and Interfaces



Use Cases - PlayerStatManager



Use Cases - PlayerStatComparer



Use Cases - PlayerStatPredictor

