# 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 Adapaters

Relationships:

- SportsApp

# CLIPresenter

- A presenter class for the command line

Implements: Presenter
Subclasses:
Layer: Interface Adapaters

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 Adapaters

Relationships:

- SportsApp
- CSVDataContainer

# CSVDataContainer

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

Implements: DataContainer
Subclasses: None
Layer: Interface Adapaters

Relationships:

- DataContainer

# SportsApp

Parent: None
Subclasses: None
Layer: Framework & Drivers

- 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

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

Parent: None
Subclasses: None
Layer: Interface Adapter

- 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

- CommandManager

# Help-Related Commands

# GetListSports

Parent: None
Subclasses: None
Layer: Use Case

- Get a list of available sports

- No Collaborators

# GetListStats

Parent: None
Subclasses: None
Layer: Use Case

- Get a list of the available stats for a sport player (or team) (e.g. hockey player, tennis player)

- No Collaborators

# GetListPlayers

Parent: None
Subclasses: None
Layer: Use Case

- Get a list of available players in a sport and season

- No Collaborators

# AvailableCommands

Parent: None
Subclasses: None
Layer: Use Case

- Get a list of available commands, their features, and their syntax

- No Collaborators

# Related to Teams

# TeamStatManagerFacade

Parent: None
Subclasses: None
Layer: Use Case

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

- HockeyTeamStatManager
- *BaseballTeamStatManager (not implemented)*

# TeamStatManager (Abstract)

Parent: None
Subclasses: HockeyTeamStatManager, TennisTeamStatManager, BaseballTeamStatManager
Layer: Use Case

- Find or compute statistics about a given Team

- None

# HockeyTeamStatManager

Parent: TeamStatManager
Subclasses: None
Layer: Use Case

- Find or compute statistics about a given HockeyTeam

- TeamManager
- HockeyTeam

## *BaseballTeamStatManager (Not Implemented)*

- Find or compute statistics about a given BaseballTeam

Parent: TeamStatManager
Subclasses: None
Layer: Use Case

- TeamManager
- BaseballTeam

# Team (Abstract)

Parent: None
Subclasses: HockeyTeam, *BaseballTeam*
Layer: Entity

- Store a team's name and provide a template for concrete team classes
- Getters and Setters for the data

- HockeyTeam

# HockeyTeam

Parent: Team
Subclasses: None
Layer: Entity

- Store the information for a hockey team
- Stores goals for, wins, losses, goals for, goals against, face off win percentage, shots for, shots against, overtime losses,
- Getters and Setters for above

- TeamManager

# *BaseballTeam (Not Implemented)*

- 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

# Related to Members & Betting

# LeagueStorage

- 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 Adapaters

Relationships:

- Match
- LeagueMember

# LeagueMemberManager

Parent: None
Subclasses: None
Layer: Use Case

- 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

- Member
- Match

# LeagueMember

Parent: None
Subclasses: None
Layer: Entity

- 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

- None

# Match

Parent: None
Subclasses: None
Layer: Entity

- 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

- MemberManager

# Related to Players

# PlayerStatManager

Parent: None
Subclasses: HockeyPlayerStatManager, TennisPlayerStatManager
Layer: Use Case

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

- None

# PlayerStatManagerFacade

Parent: None
Subclasses: None
Layer: Use Case

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

- 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 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

Parent: None
Subclasses: HockeyPlayerStatComparer, TennisPlayerStatComparer
Layer: Use Case

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

- None

# PlayerStatComparerFacade

Parent: None
Subclasses: None
Layer: Use Case

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

- HockeyPlayerStatComparer
- TennisPlayerStatComparer
- BaseballPlayerStatComparer

# HockeyPlayerStatComparer

Parent: PlayerStatComparer
Subclasses: None
Layer: Use Case

- 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

- HockeyPlayer
- DataContainer

# TennisPlayerStatComparer

Parent: PlayerStatComparer
Subclasses: None
Layer: Use Case

- 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

- TennisPlayer
- DataContainer

# BaseballPlayerStatComparer

Parent: PlayerStatComparer
Subclasses: None
Layer: Use Case

- 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

- BaseballPlayer
- DataContainer

# PlayerStatPredictor

Parent: None
Subclasses: None
Layer: Use Case

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

- None

# PlayerStatPredictorFacade

Parent: None
Subclasses: None
Layer: Use Case

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

- HockeyPlayerStatPredictor
- TennisPlayerStatPredictor
- BaseballPlayerStatPredictor

# HockeyPlayerStatPredictor

Parent: PlayerStatPredictor
Subclasses: None
Layer: Use Case

- 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

- HockeyPlayer
- DataContainer

# TennisPlayerStatPredictor

Parent: PlayerStatPredictor
Subclasses: None
Layer: Use Case

- 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

- TennisPlayer
- TennisPlayerList

# BaseballPlayerStatPredictor

Parent: PlayerStatPredictor
Subclasses: None
Layer: Use Case

- 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

- BaseballPlayer
- DataContainer

# Player (Abstact)

Parent: None
Subclasses: HockeyPlayer
Layer: Entity

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

- None

# HockeyPlayer

Parent: HockeyPlayer
Subclasses: None
Layer: Entity

- 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

- None

# TennisPlayer

- Store a tennis player's:
  - rank
  - nationality (represented by the 3 letter IOC code for their country)
  - number of matches
  - number of aces
  - number of double faults
  - percentage of serve points won
  - percentage of return points won
  - percentage of break points converted
  - percentage of break points saved
  - percentage of serve games won
  - percentage of return games won
- Getter and setters for above

Parent: Player
Subclasses: None
Layer: Entity

- None

# BaseballPlayer

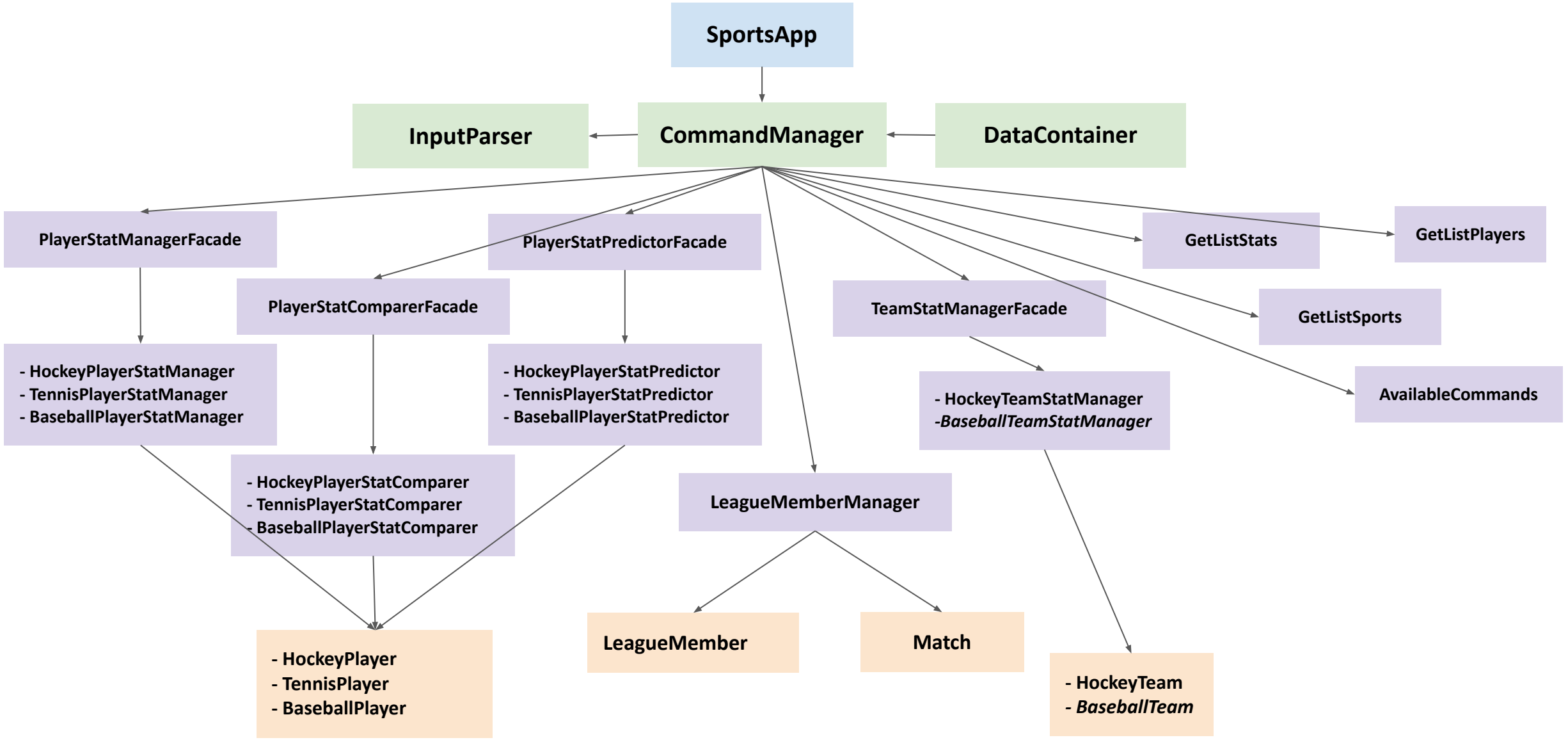
Parent: Player
Subclasses: None
Layer: Entity

- 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

- None

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

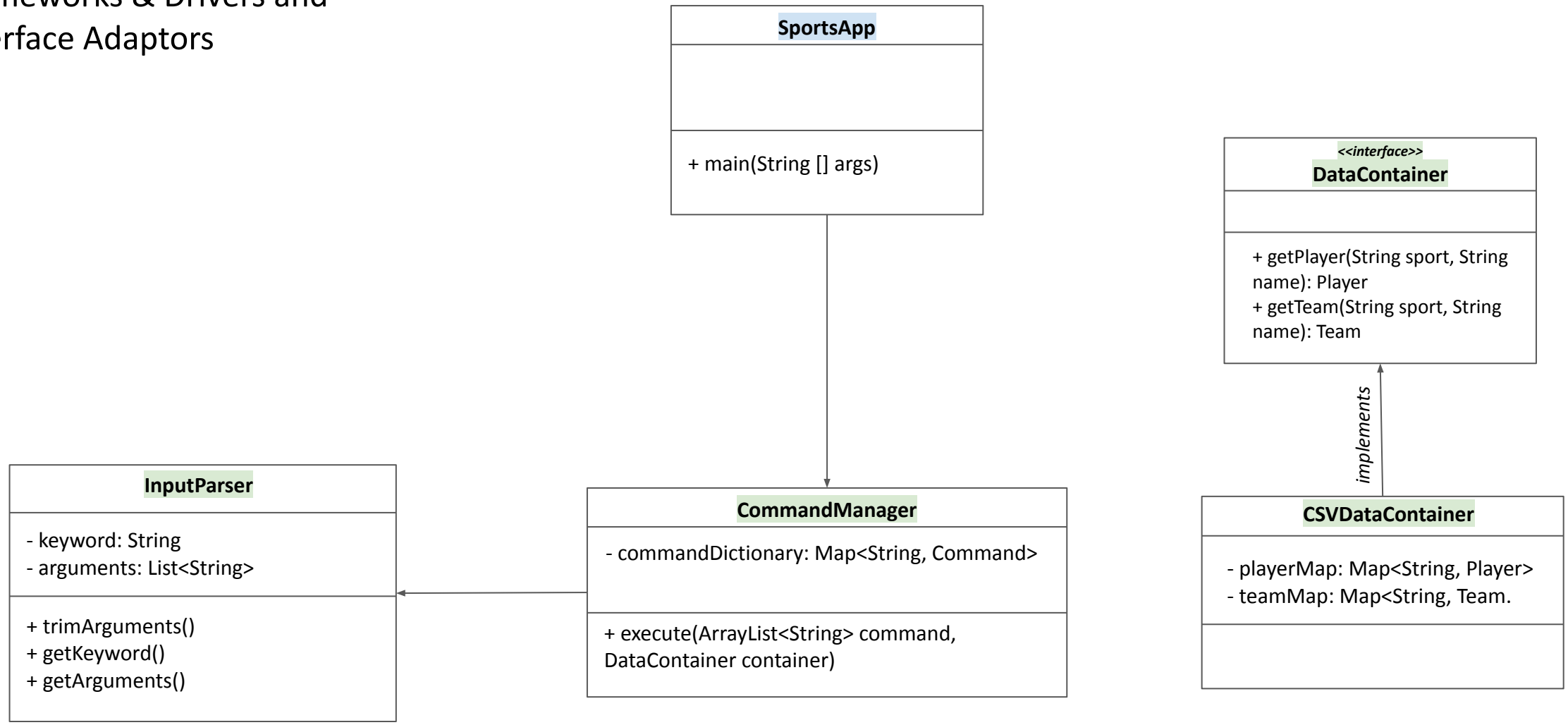
# Simplified Class Diagram


SportsApp
InputParser
CommandManager
DataContainer
PlayerStatManagerFacade
PlayerStatPredictorFacade
GetListStats
GetListPlayers
PlayerStatComparerFacade
TeamStatManagerFacade
GetListSports
- HockeyPlayerStatManager
- TennisPlayerStatManager
- BaseballPlayerStatManager
- HockeyPlayerStatPredictor
- TennisPlayerStatPredictor
- BaseballPlayerStatPredictor
- HockeyTeamStatManager
-BaseballTeamStatManager
AvailableCommands
- HockeyPlayerStatComparer
- TennisPlayerStatComparer
- BaseballPlayerStatComparer
LeagueMemberManager
- HockeyPlayer
- TennisPlayer
- BaseballPlayer
LeagueMember
Match
- HockeyTeam
- BaseballTeam

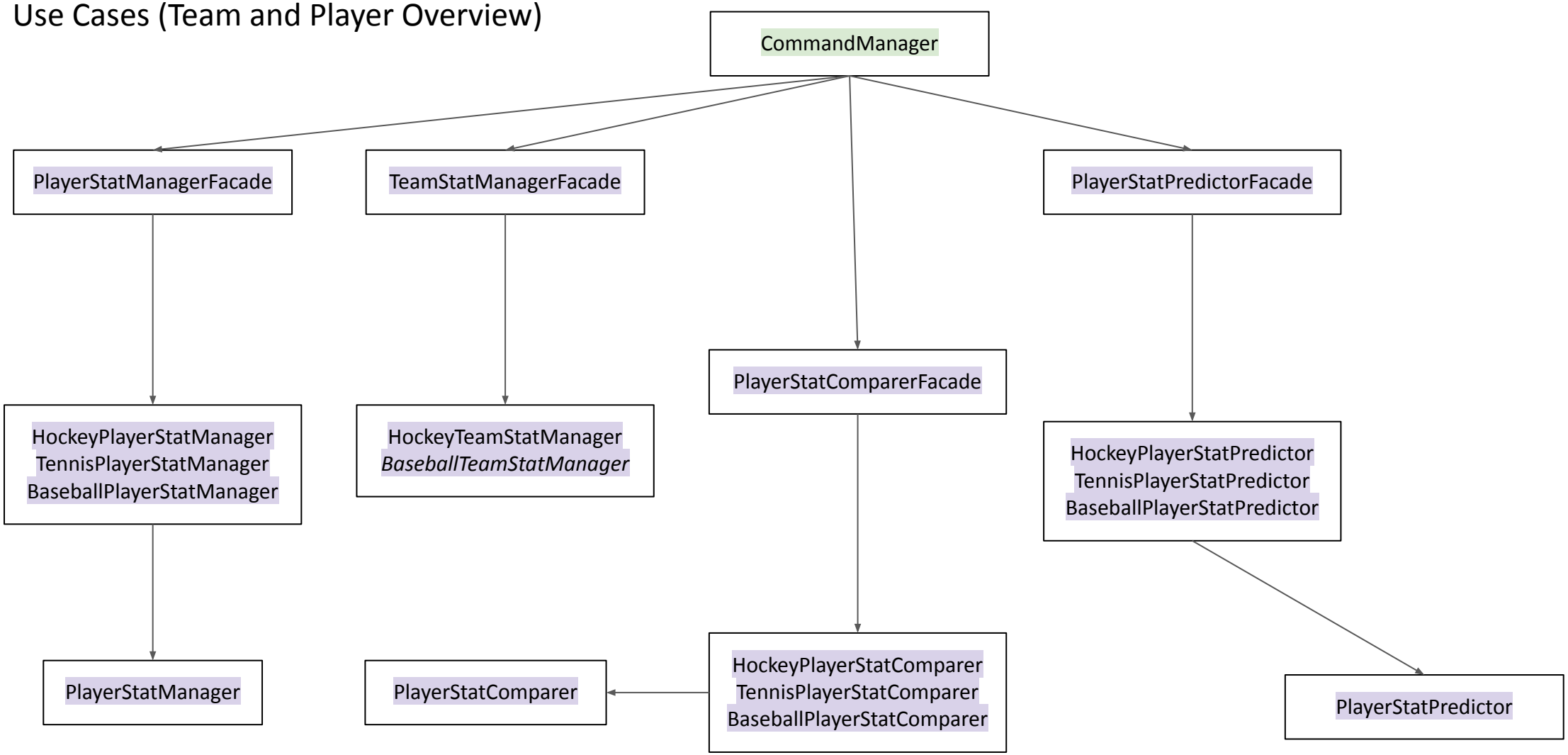
- Framework and Drivers
- Interface Adapters
- Use Cases
- Entities

# Class Diagrams by Clean Architecture Layer

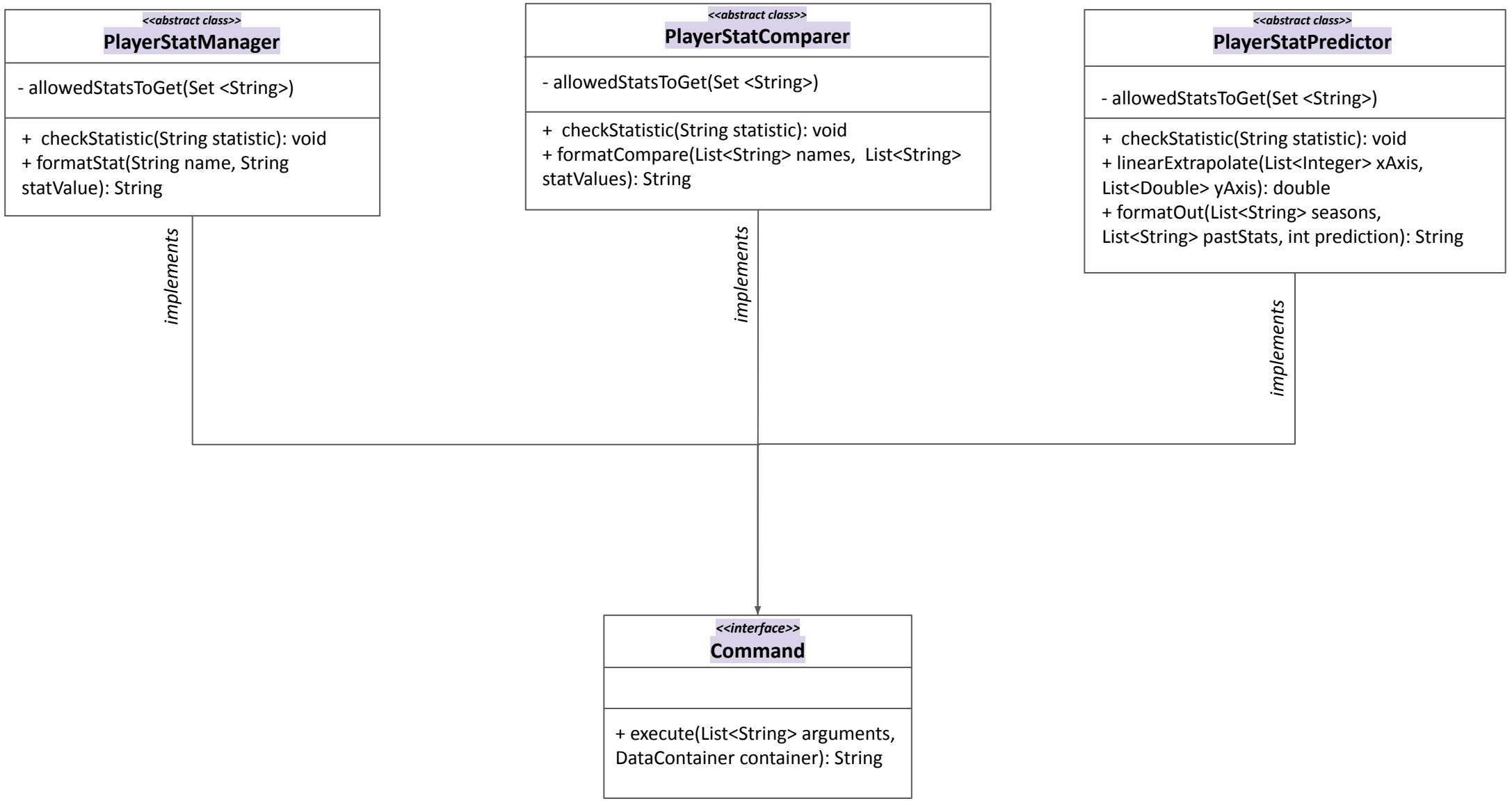
# Frameworks & Drivers and Interface Adaptors



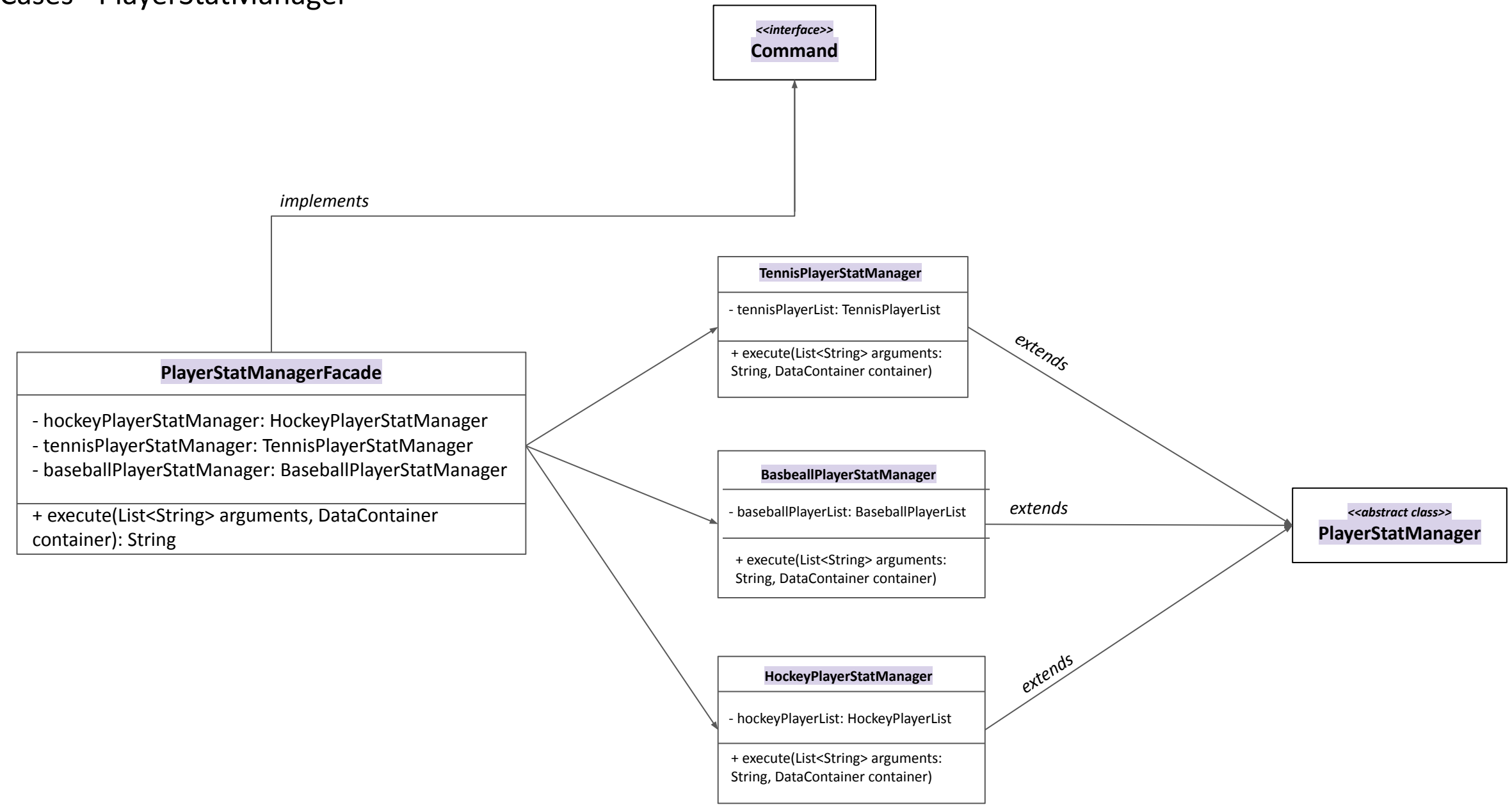
# Use Cases (Team and Player Overview)



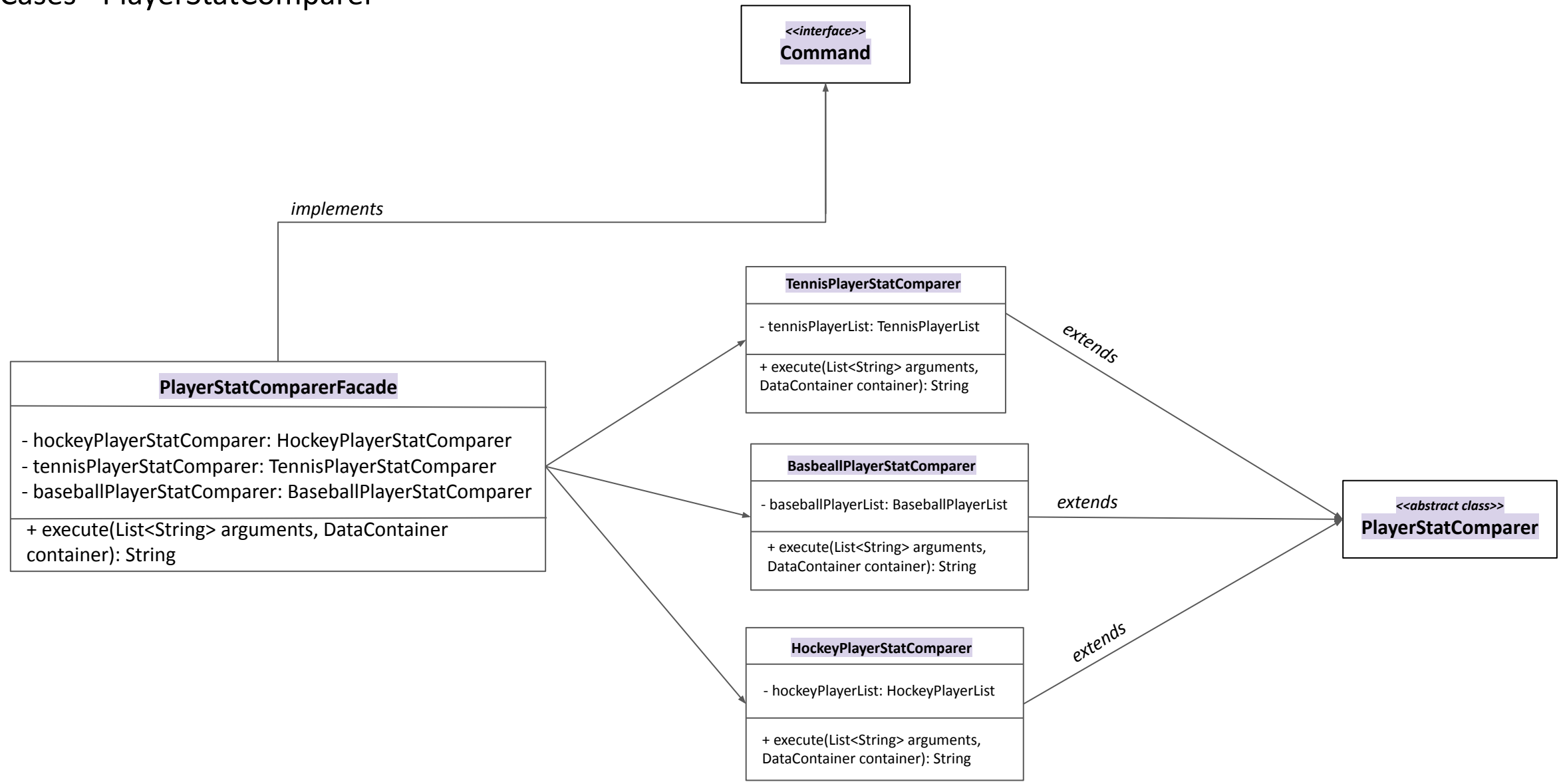
# Use Cases - Abstract Classes and Interfaces



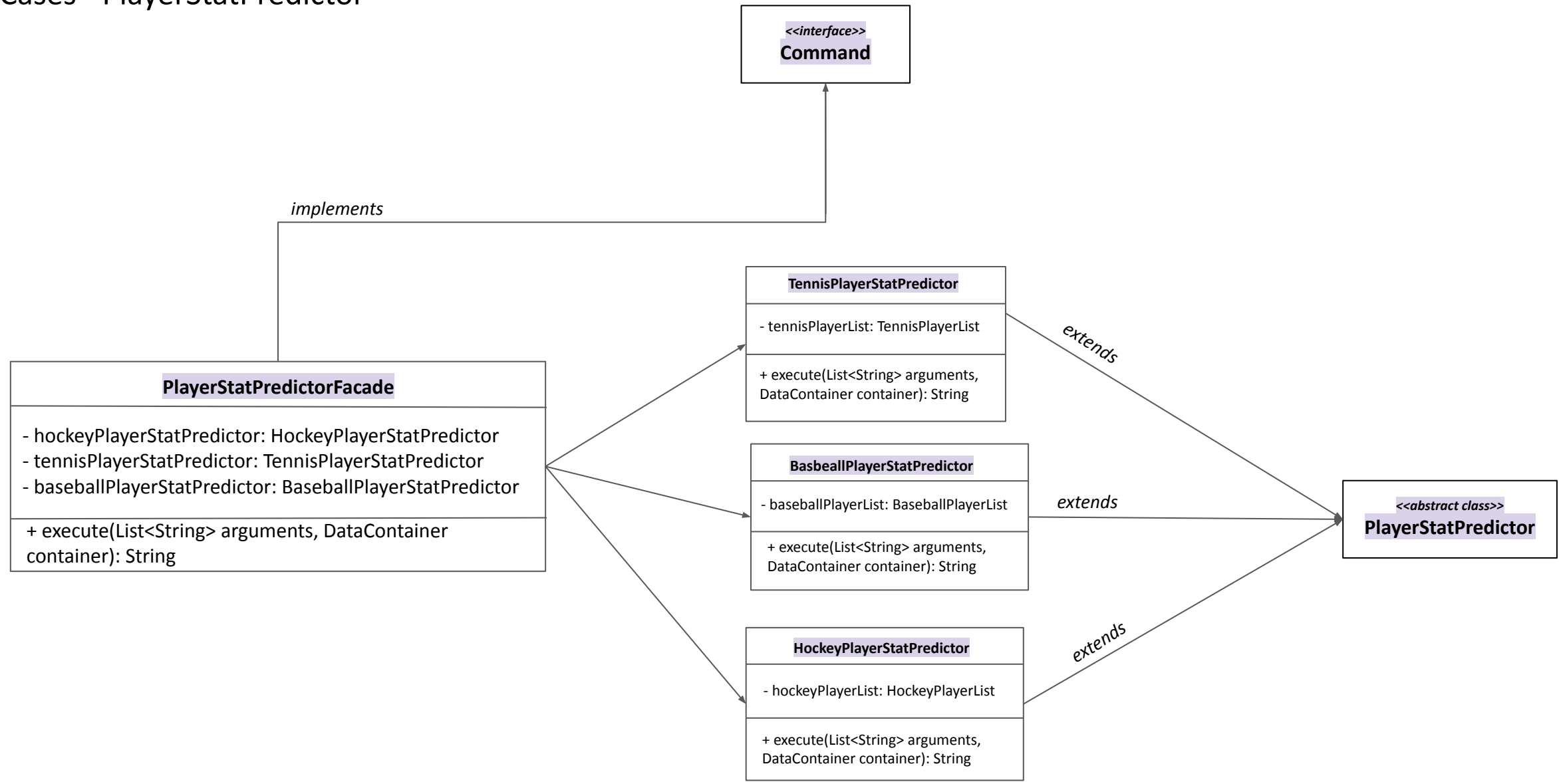
# Use Cases - PlayerStatManager



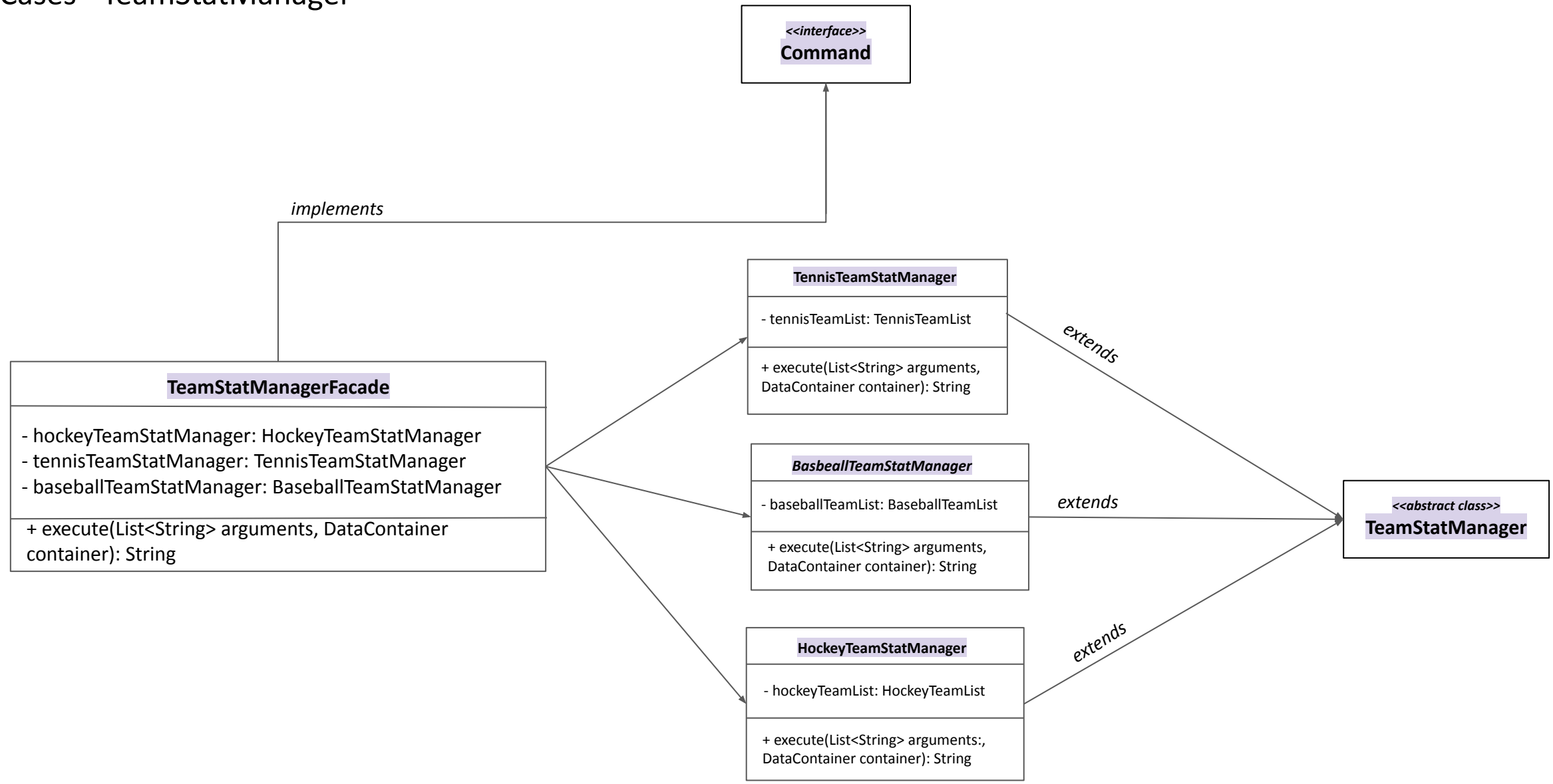
# Use Cases - PlayerStatComparer



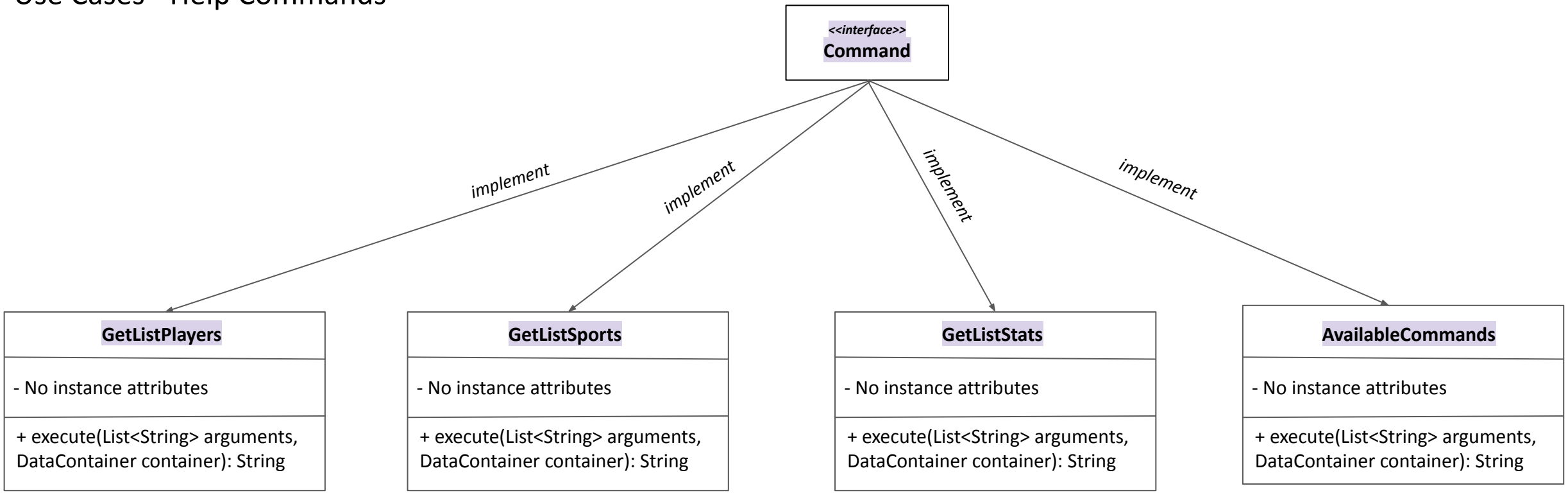
# Use Cases - PlayerStatPredictor



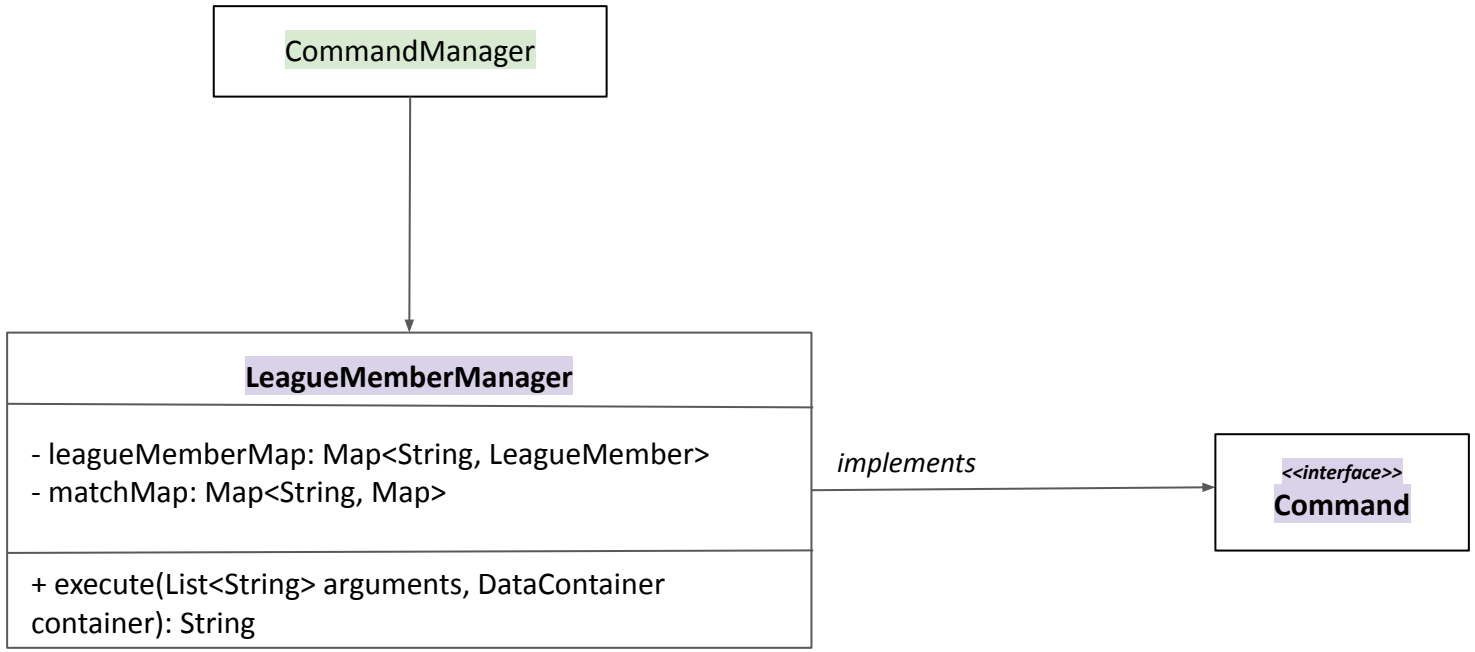
# Use Cases - TeamStatManager



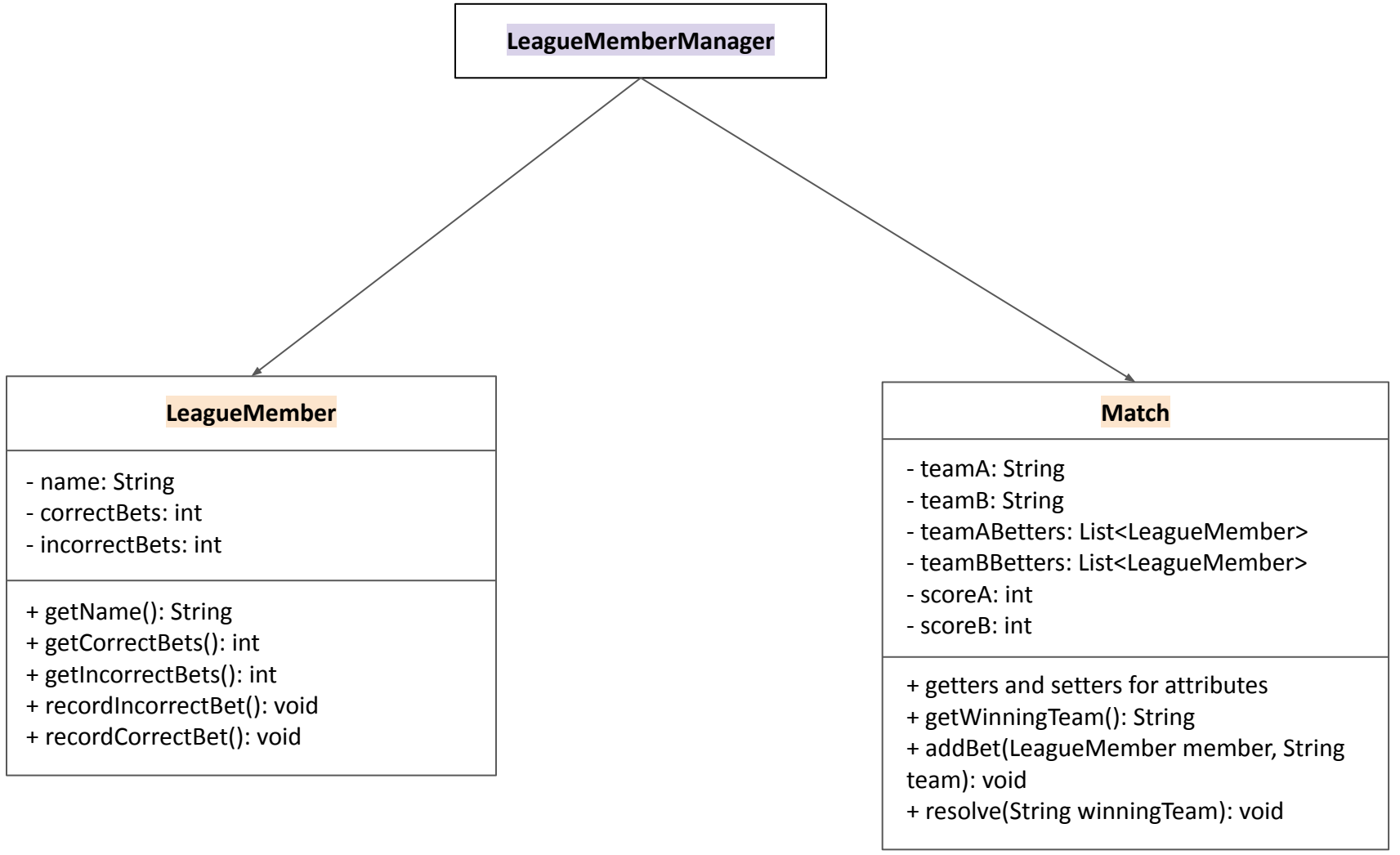
# Use Cases - Help Commands



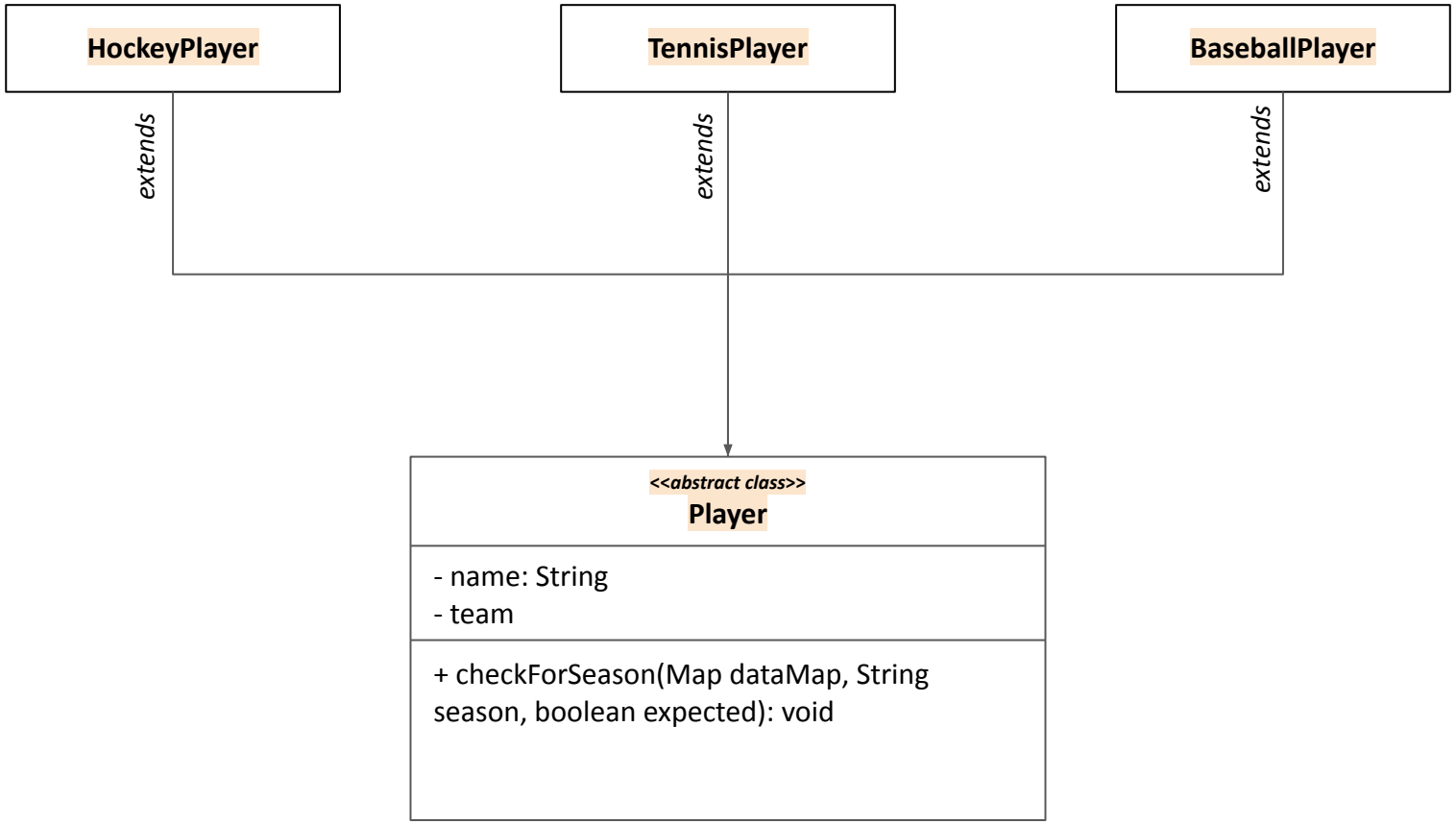
# Use Cases - LeagueMemberManager



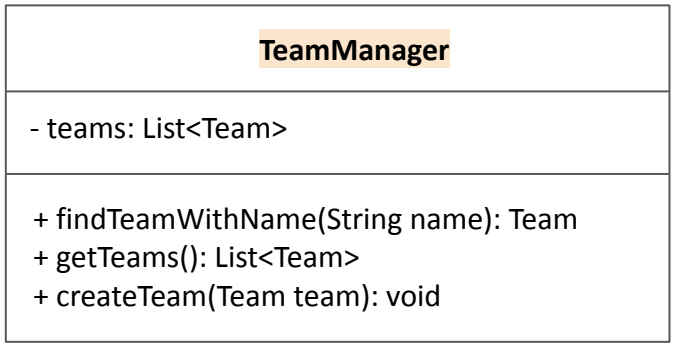
# Entities - Fantasy League

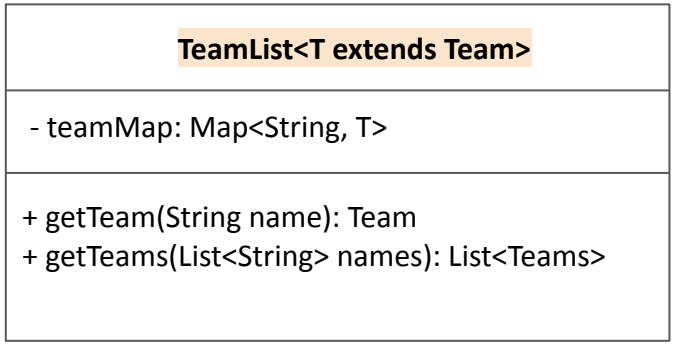


# Entities - Player (cont.)

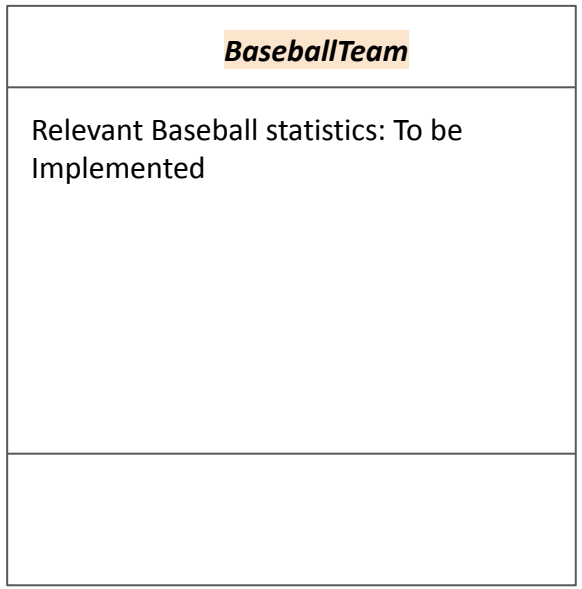


# Entities - Team (cont.)







# Entities - Team (cont.)