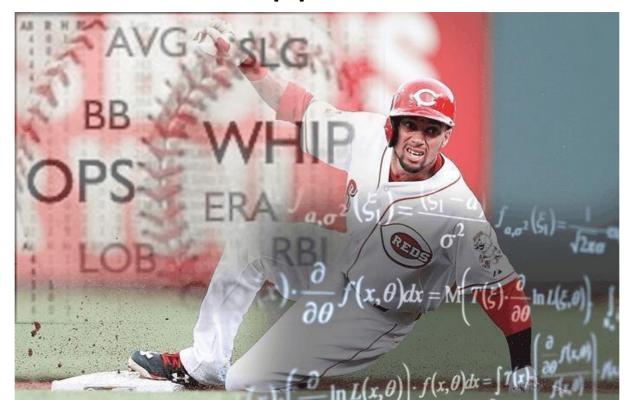
Baseball App User Manual



Themasemester: Big Data Version: 0.1

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Erenay Aykilic	500801090	BD1-B1
Daniel IJsbrandij	500803211	BD1-B1
Bram Minderhoud	500714605	BD1-B1
Shayeed Sohabatali	50076075	BD1-B1
Michelle Spong	500832751	BD1-B1
Hassan Adnane	500805193	BD1-B2
Marloes Flier	500806454	BD1-B2
Kasper Wiepking	500804715	BD1-B2
Michael Visser	500823669	BD1-B1
Abdellah Amnad	500799703	BD1-B1
Shan Hu	500684659	BD1-B1
Semih Simsir	500830526	BD1-B1
Wang Di Jiang	500826958	BD1-B1

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Preface

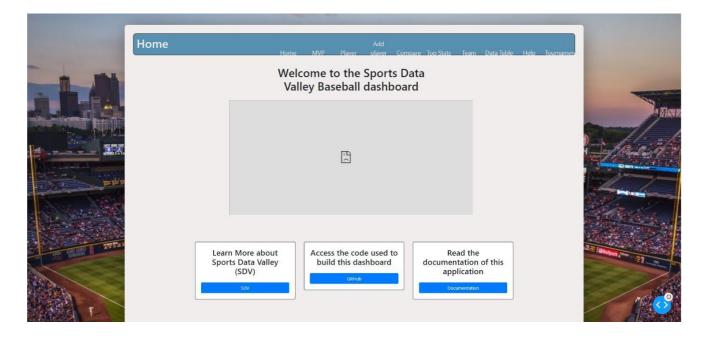
The website is built to support the coach of the KNBSB with the selection of players and see how they develop their skills in a detailed dashboard. This dashboard consists of multiple ways to drill into a player's career and get a good look at how the player compares over seasons, years or with other players.

This dashboard is also capable of gathering information from other baseball statistic websites and group them to get a good look at how players perform in other leagues outside of the Netherlands.

This dashboard was made by students from the HvA and overseen by Peter Odenhoven. For any questions regarding the final product, please contact Peter Odenhoven.

Home page

On the homepage you can find information about the dashboard and how it was built. If a page is missing or in development, this will be the default page where you will be redirected to.



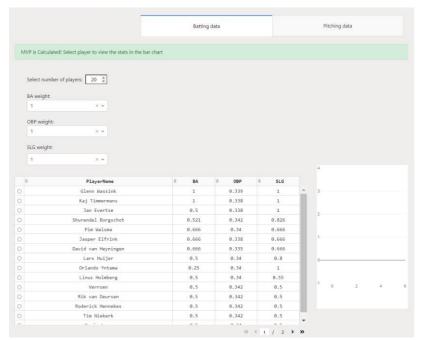
MVP page

On the MVP page you can find out more about the most valuable player. Here we have created a page where you can determine the best pitching/batting player for the position in question.

To determine the most valuable player, we used a formula that we have developed. For batting it is BA * OBP * SLG, here you can determine how heavy the relevant stat weighs in this calculation. For Pitching we used the formula ERA * WHIP * SO9 to determine

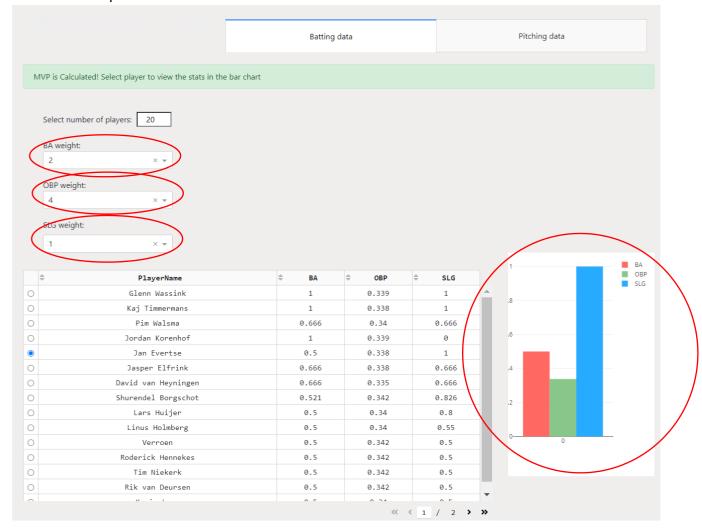
the most valuable player. Here you can also determine how heavy the stat weighs in the calculation.

After the calculation is done you can check each player to see in which stat the player excels. We have made this possible for both Batting and Pitching.



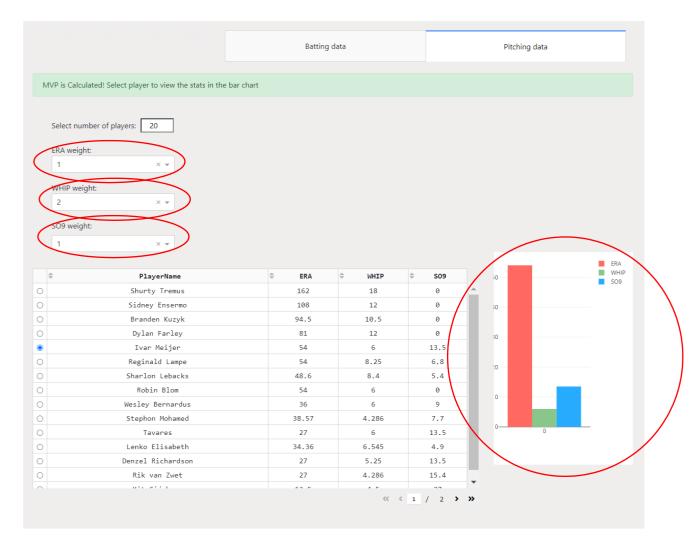
Batting:

As shown in the figure below, the most valuable player was determined for taking a factor of 2 for BA, a factor of 4 for OBP and a factor of 1 for SLG. The stats that came out of this can be seen in the plot.



Pitching:

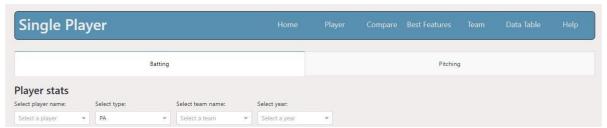
As you can see in the picture below, the most valuable player is determined by taking a factor of 1 for ERA, a factor of 2 for WHIP and a factor of 1 for SO9. The stats that came out of this can be seen in the plot.



Player page

In the player page you will be able to compare a player with himself over the course of seasons, years or teams. This will help with evaluating a player to select him for a team or match.

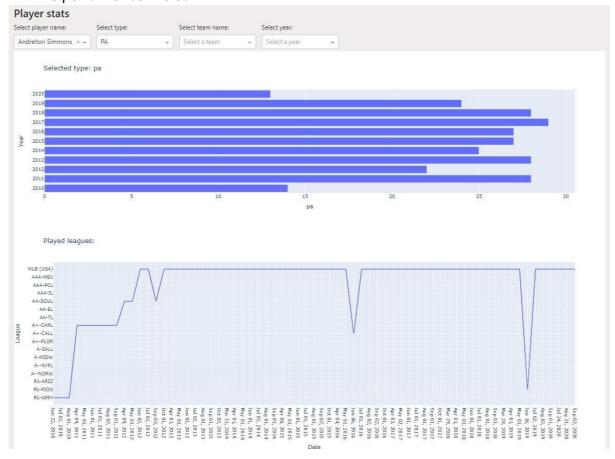
The first thing you see, is that the player page is divided into different tabs. When clicking the left tab, the page is selecting the batting data. The right tab selects the Pitching data.



You can click on the "Select a player" to view a dropdown list with all the players in the database. You can then select a team name to view his performance in a team. You can then select a season to view how he performed in a specific time period. Note that only a player is also enough to show a graph.

In the player stats section below the league comparison is a detailed barchart of how a player is doing in terms of statistics over the seasons. You can select stats like OPS, PA, SLG and more.

If done correctly, and the database has information about this player, it will show a graph with his performance like so:



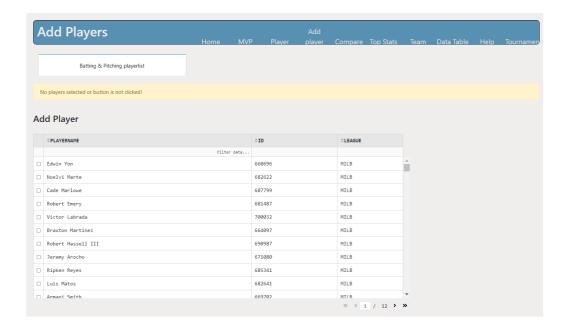
Overview stats

In this table you can find all the different stats about a team, and see how the averages are compared to other teams over the seasons. This can give you an idea of what team is strong in what position and may be able to find a weakness to counter that.

	L Red Sox				- AD	ф H (1111	A 17 A	INDI	. 55		- 710	. 00.			
2011 Gre		FRk-DOSL	63	280	239	75	3	39	42	4	5	.313	.324	.422	.819	.108
	eenville Drive	A-SALL	72	296	265	69	16	38	45	1	3	.260	.324	.509	.833	.249
2012 Por	rtland Sea Dogs	AA-EL	23	97	92	30	5	12	17	1	1	.326	.324	.597	.948	. 271
2012 Sa	lem Red Sox	A+-CARL	104	436	384	116	15	59	64	4	4	.302	.325	.505	.883	.203
2013 Bos	ston Red Sox	MLB (USA)	30	84	71	19	1	16	7	1	0	.267	.325	.408	.765	.140
2013 Pau	wtucket Red Sox	AAA-IL	60	257	225	64	9	32	32	2	2	.284	.325	.453	.822	.168
2013 Poi	rtland Sea Dogs	AA-EL	56	259	219	68	6	40	35	5	0	.310	.326	.502	.907	.191
2014 Bos	ston Red Sox	MLB (USA)	144	595	538	129	12	60	46	2	3	.239	.325	.362	.659	.122
2015 Bos	ston Red Sox	MLB (USA)	156	655	613	196	7	84	81	10	2	.319	.326	.420	.775	.101
2016 Bos	ston Red Sox	MLB (USA)	160	731	664	195	21	116	89	13	4	.293	.326	.442	.797	.149
2017 Bos	ston Red Sox	MLB (USA)	152	659	588	157	11	96	63	15	1	.267	.326	.397	.740	.130
2018 Bos	ston Red Sox	MLB (USA)	150	651	571	161	24	77	110	8	2	.281	.326	.500	.860	.218
2018 Pau	wtucket Red Sox	AAA-IL	1	3	3	2	1	1	1	0	0	.666	.326	.000	.666	1.000
2019 Bos	ston Red Sox	MLB (USA)	155	700	614	190	33	110	117	4	2	.309	.327	.555	.941	. 245
2020 Bos	ston Red Sox	MLB (USA)	56	227	203	61	11	36	28	8	0	.300	.327	.502	.872	. 201
Fieldin Year \$	g overview Team	\$League		G :	P0	ф A	•	E 💠 C	Н≑	FLD%						
2013 B	Boston Red Sox	MLB (USA)		30	17	39		1 5	7	.982						
2014 B	Boston Red Sox	MLB (USA)		143	175	320	2	9 51	5	.961						
2015 B	Boston Red Sox	MLB (USA)		156	236	429	1	1 67	6	.983						
2016 B	Boston Red Sox	MLB (USA)		160	200	359	1	2 57	1	.978						
2017 B	Boston Red Sox	MLB (USA)		150	208	347	1	7 57	2	.970						
2018 B	Boston Red Sox	MLB (USA)		150	176	373	1	9 55	9	.982						
2019 B	Boston Red Sox	MLB (USA)		153	165	348	1	3 52	6	.975						

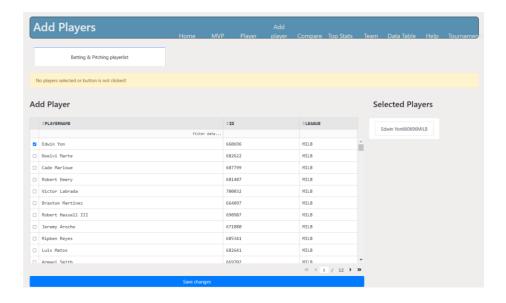
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Add Player

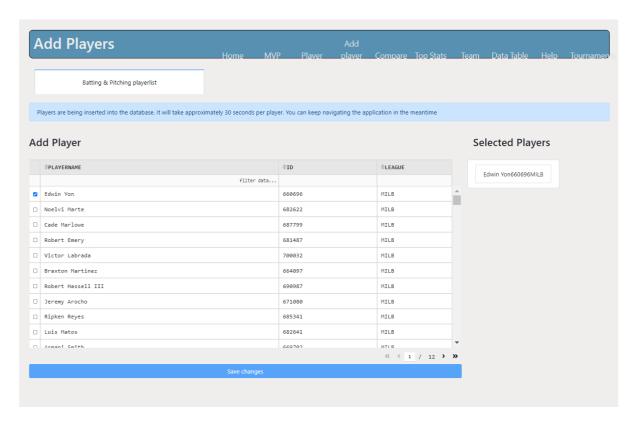


This functionality is to add players that are not automatically scraped or not in the database yet. The players that are in this list are all the current players in the MLB and the MILB league. Once you add a player, all of the statistics and data will be scraped and inserted into the database so you can use all the features.

When you first arrive on this page, you will see a message "No players selected or button is not clicked!". This means that you have not selected a player yet, once you select a player you want to add in the table, the player stats will appear on the right of the data table and the save button will appear below the data table.



Once the save button is clicked, the selected players will be scraped and inserted into the database. The scrapers will run in the background, meaning that you could use other functionalities in the meantime. It will take approximately 30 seconds per player to be scraped and inserted into the database.

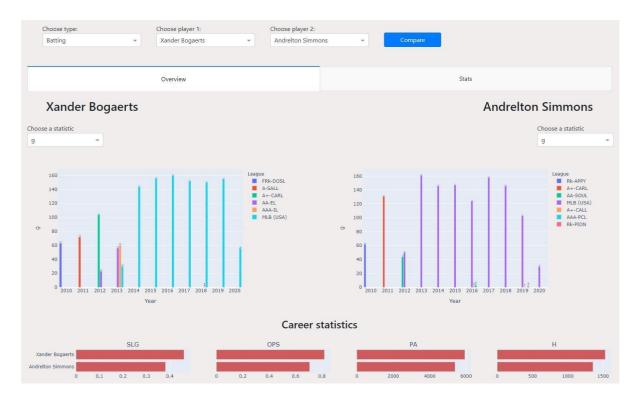


Compare

In the compare page you can compare two players with each other. This is useful for decision making when putting a team together.

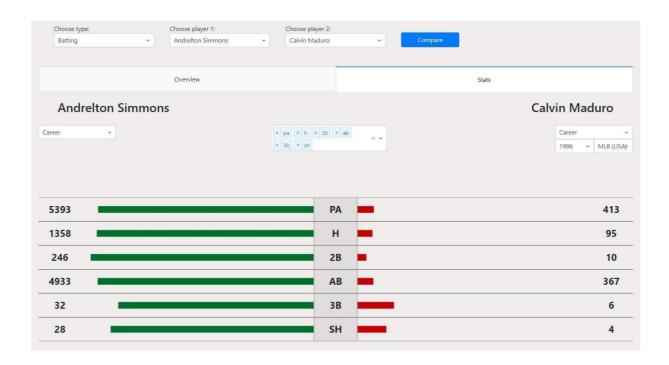
Overview

First you must select the type you want to compare. Next, select two players. When you select 2 players, click on "Compare". You will then see the player names and are able to choose a statistic to compare. At the bottom of the page the most important statistics are given.



Stats

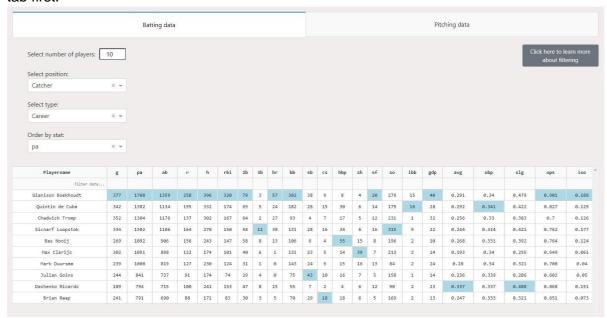
When you click on "Stats", you will be able to compare a player based on their career, season or stats. This is a useful tool to compare players with other players in a different year, or compare a player with himself and see if he developed or lost some of his skills. This way you can easily see if a player developed a new skill. Note that you can also select the same player twice to see certain stats to compare to himself.



Best features

The best features page is designed to find the best player on a particular statistic. You can select the top ... players based on the selected statistic. The user can decide how many players he/she wants to see at the top. If the user doesn't select any number, then all data is selected. After selecting a statistic, the user sees different cells colored blue, this means that the player who has a blue colored cell, scores the highest on this statistic.

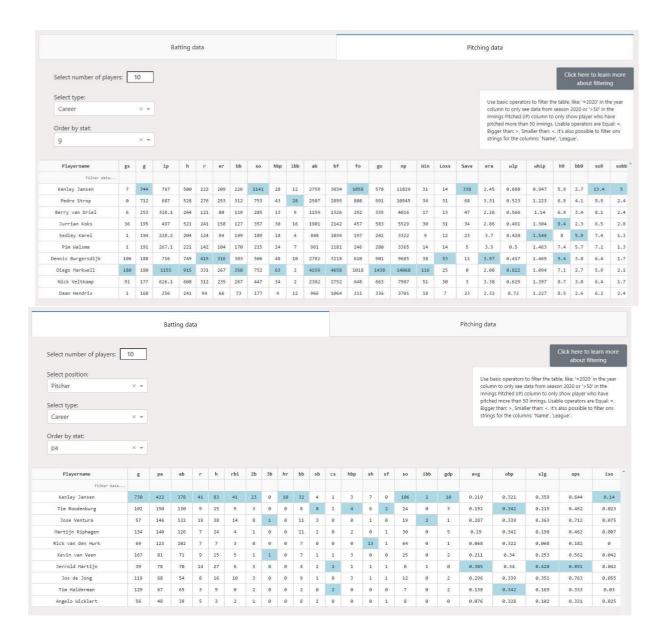
When the best features page is selected, this is what the user sees first, A page that is divided into two tabs, the batting tab and the pitching tab. The user always gets to the batting tab first.



This page shows the batting data. The user has to choose the position of the players and can choose whether he/she wants to see the data of the career or over a specific year. Once the user has selected the statistic, the data will be loaded. The user can also filter in the

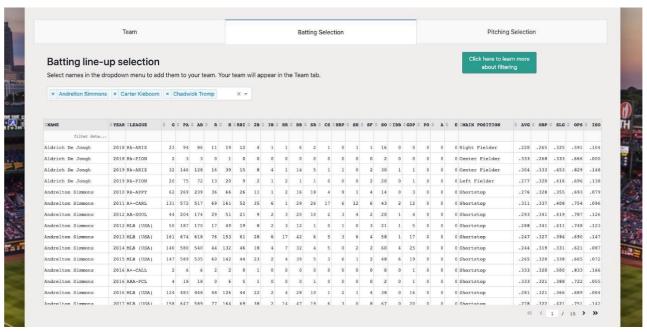
newly created table. If the user wants to know how to filter, he/she can click on the gray button on the right (above the table) for the explanation.

When the user selects the tab of the pitching data, it all works the same as the batting data. However, with the pitching tab there is no dropdown for selecting a position, because the data contains only information about the pitching position.

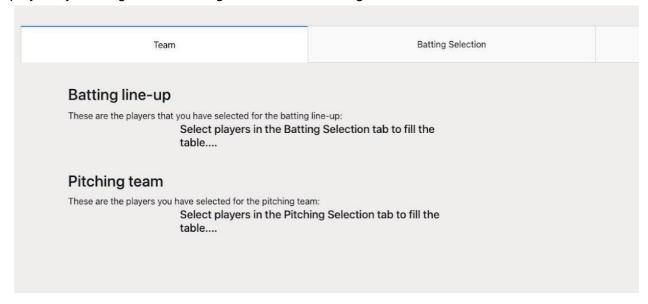


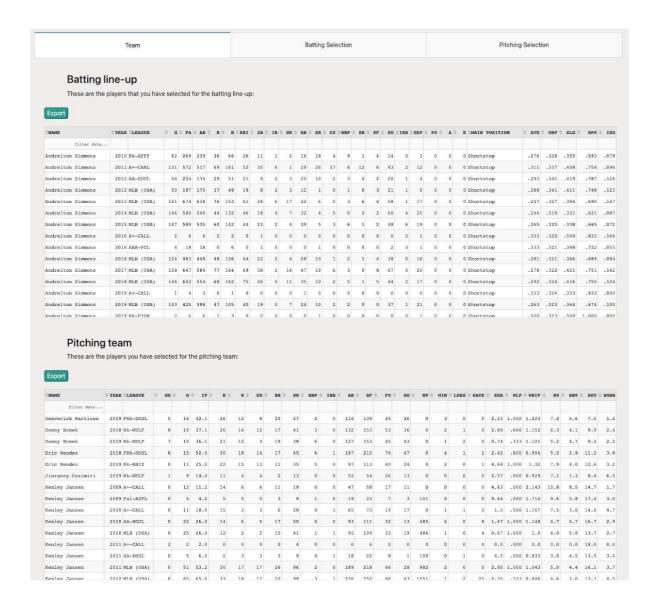
Team Selection

In the team selection page you can compare teams with each other and see how they play against other teams in terms of stats. This gives a good impression of how to counter a set of players.



First, you need to select players in order to filter them in the table. If you don't select any players, you will get the following screen when clicking on the "Teams" tab:





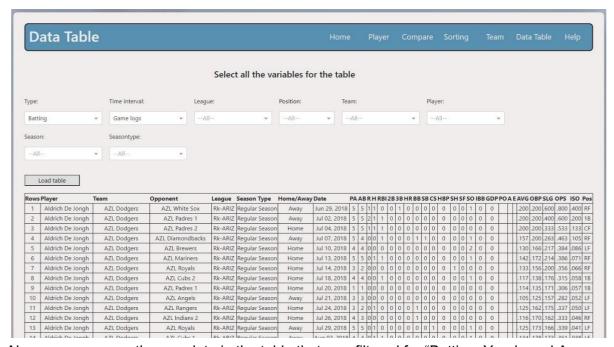
If you click on the teams tab, you get an overview with all the players you selected in the other tabs. This can be used to evaluate your team setup and compare it with opponents. This way you can view the stats of multiple players in the batting and pitching line up.

You can also export the table as an .xlsx file to look at the data later, or to make multiple compositions.

Data Tables

In the data tables page you can find a detailed table with all the raw information that the app works with.

You can filter the data based on batting, pitching, fielding, but also select a time interval like game logs, yearly logs and career logs. Also, you can fill in the league you want to filter on and select what positions you want to display. This way you can narrow down to find a perfect pick for your team.

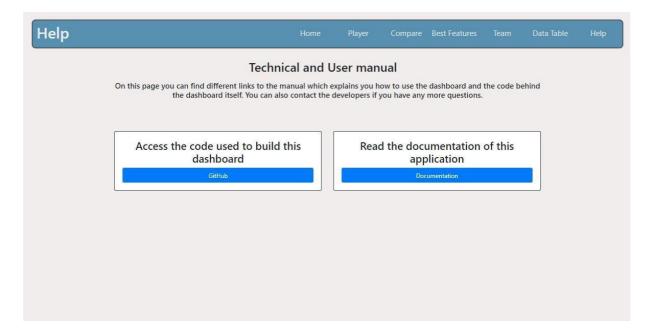


Above you can see the raw data in the table that was filtered for "Batting, Yearly and A+FLOR".

Help page

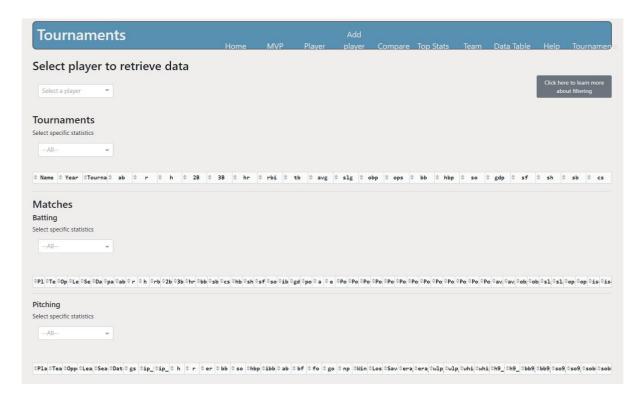
On the help page you can find useful information for developers and users alike. If you click on the Github button, you will be redirected to the github website where you can find the code that was used to build this dashboard.

If you click on the manual button, it will take you to this document.



Tournaments

This functionality is built to retrieve data from the played tournaments or matches from a specific player. The played matches are divided in two sections, batting and pitching. If a player does not have any data for the played tournaments or matches, the table will remain empty. For the tournaments we have set fixed columns "Name", "Year", "Tournament". And for the batting and the pitching matches we have set fixed columns "PlayerName", "Team", "Opponent", "League", "SeasonType", "DateString".



You start off with selecting a player. Once a player is selected, all the statistics of all the matches and or tournaments will be selected by default. You can select specific statistics by using the dropdowns for the tournament and the matches tables.

In this example, we have selected the player "roger bernadina". We have not specified the statistics for the tournament so all the stats will be shown as default.

In the batting table, we have selected one of the stats we would like to see in the table. As you can see, this player has no data for the pitching table, which means that this player does not have any pitching matches played.

