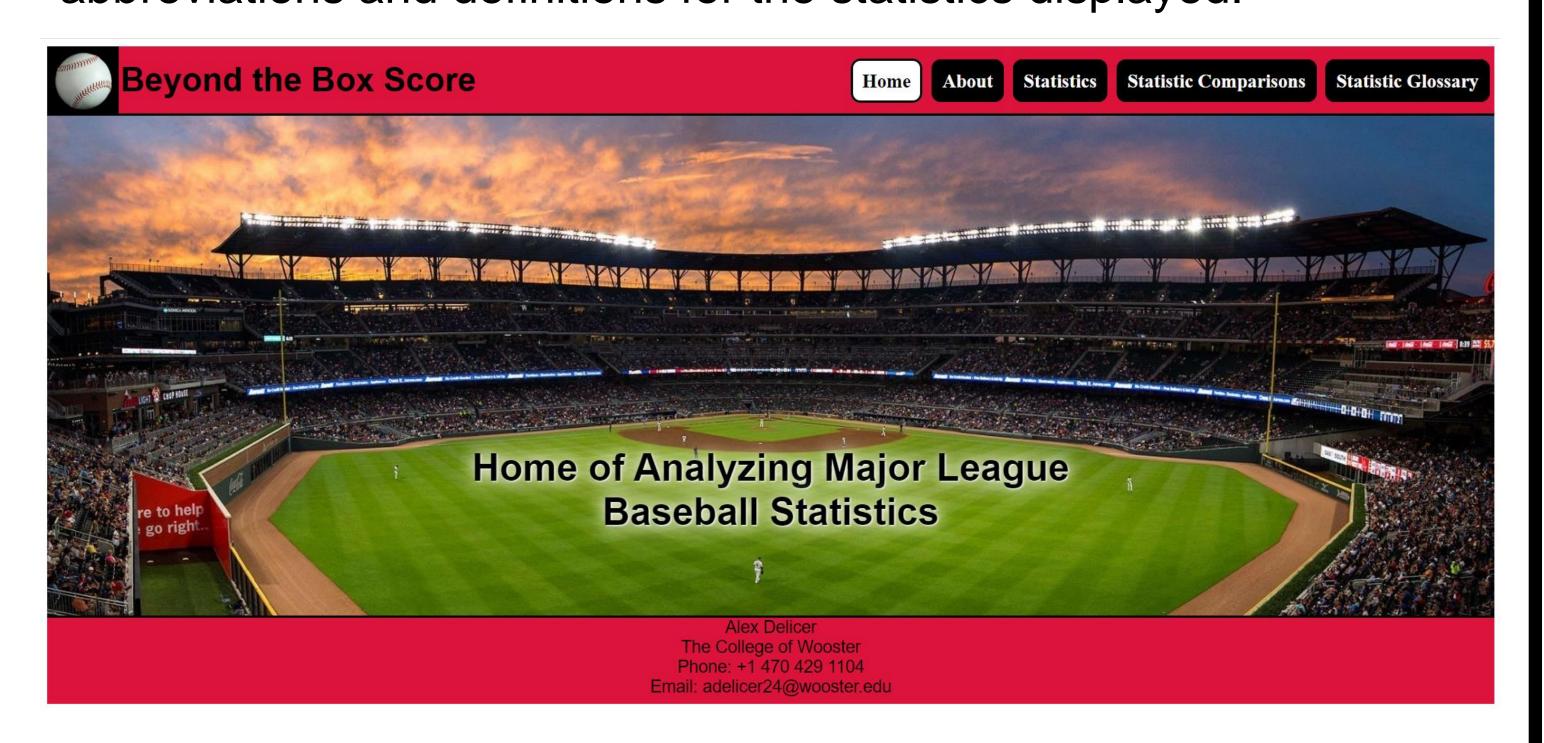


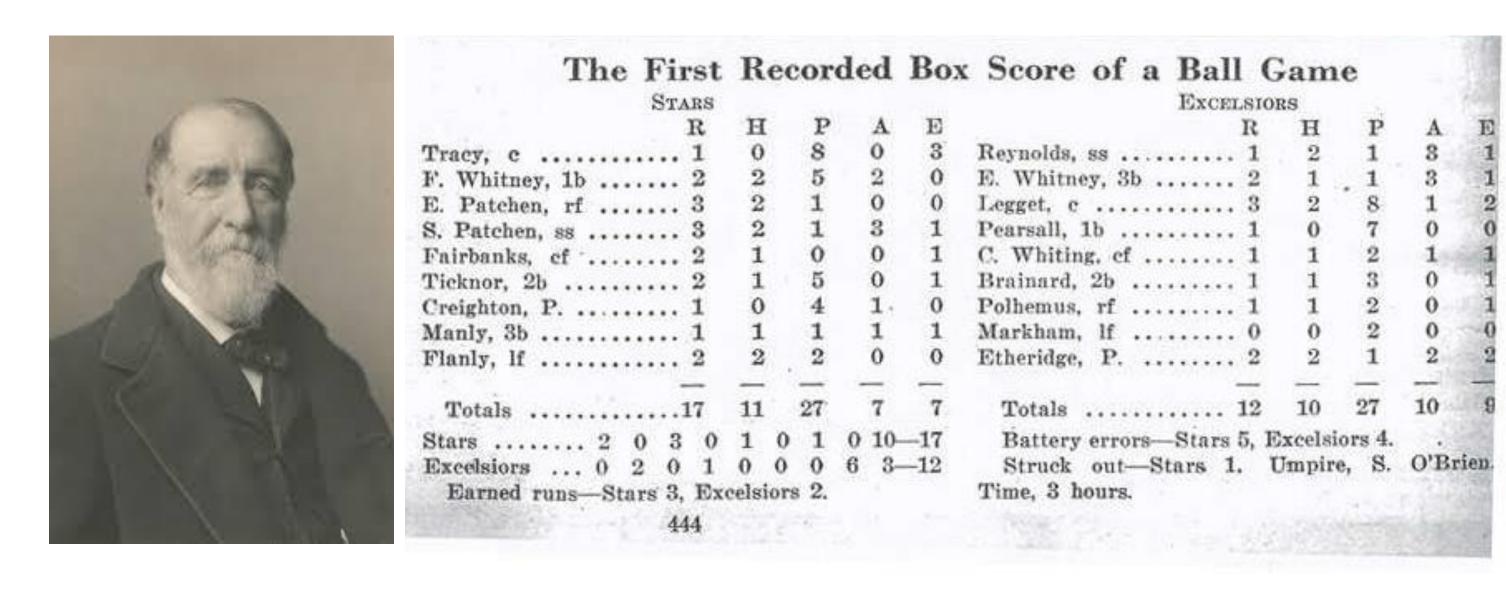
Overview

I created a web application that displays Major League Baseball statistics. This includes player and team statistics and awards given to players. Several comparisons between statistics, trends among player awards, and observations about team success are also provided. A statistic glossary was created to provide abbreviations and definitions for the statistics displayed.



Brief History On Baseball and Statistics

- The New York Knicker Bocker Baseball Club was the first small baseball organization in 1845
- Baseball became an organized sport in 1876
- Statistics arose around the 1860s
- Henry Chadwick popularized the box score in 1859
- The Baseball Encyclopedia was the first complete historical register for baseball statistics
- Sabermetrics was invented by Bill James in the 1970s
- Analysts and front offices use sabermetrics to get a more accurate outlook on player performance



Creating a Web Application for Displaying Major League Baseball Statistics

Alex Delicer | Computer Science | Advised by Dr. Thomas Montelione

Beyond the Box Score Web Application

There are several web pages that offer information to users.

Awards Page

2018 2019 2020 2021 2022 2023

- Lists award winners for the past 6 seasons
- Includes the number of times a player has won

Awards Standard Batting Sabermetric Batting Standard Fielding Standard Fielding Standard Pitching Standard Pitching Sabermetric Pitching Sabermetric Pitching

Can be filtered by year

Awards Standard Batting Standard Batting Standard Fielding Fielding Fielding Standard Advanced Fielding Standard Fielding Standard Fielding Standard Advanced Fielding Standard Fielding Standard Fielding Fieldin

Player Statistics Pages

- Lists player statistics for a given season
- Split into 8 categories
- Can search for individual players or filter by team

Team Statistics Page

- Lists team statistics for the past 6 seasons
- Can be filtered by team, league, year, and season outcome

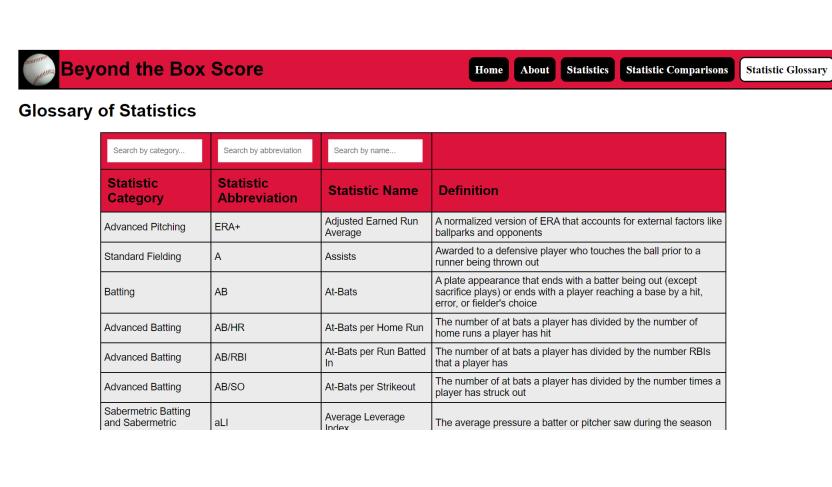
am Statistics										
Year	ear: All V Filte	Team Abbreviation	Wins	Losses	Winning Percentage	Division	Filter By Seas	Division Outcome	Season Outcome	Payroll
2023	Arizona Diamondbacks	ARI	84	78	0.519	West Division	National League	2nd Place	World Series Runner Up	\$112,763,57
2023	Atlanta Braves	ATL	104	58	0.642	East Division	National League	1st Place	Postseason Contender	\$199,727,50
2023	Baltimore Orioles	BAL	101	61	0.623	East Division	American League	1st Place	Postseason Contender	\$64,907,966
2023	Boston Red Sox	BOS	78	84	0.481	East Division	American League	5th Place	Eliminated from Postseason Contention	\$175,783,18
2023	Chicago Cubs	СНС	83	79	0.512	Central Division	National League	2nd Place	Eliminated from Postseason Contention	\$180,115,000
2023	Chicago White Sox	CHW	61	101	0.377	Central Division	American League	4th Place	Eliminated from Postseason Contention	\$180,911,66

Comparison Page

- Compares several statistics
- Observes trends in player awards
- Observes trends in team success

Glossary Page

- Lists the definition,
 abbreviation, and category
 statistics
- Can search for individual statistics by name,
 abbreviation, or category



Usability Testing

Usability testing was conducted on several students at the College of Wooster to receive feedback on the web application's design. This included providing users with several tasks to complete to test its the functionality. Users were asked to complete a survey to evaluate their experience with the application.

You have just opened this web application. You see the title web page but are unsure of what this website's purpose is. Find information about the web application's purpose.
 You now know what this web application's purpose is. You want to find out what fielding statistics are recorded on this web application. Find out what statistics are recorded for fielding.
 You decide that you want to see the fielding statistics of your favorite player. His name is Ronald Acuna Jr. Find the standard fielding statistics that were recorded by Ronald Acuna Jr. in any year.
 You see a fielding statistic that you are unfamiliar with. The abbreviation of this statistic in the fielding table is "PO." You do not have Google readily available to find out what this statistic is. Find out where the web application can define what "PO" is.
 You see that there is an interesting batting statistic by the name of "Wins Above Replacement (WAR)" in the glossary. You see in the "Statistic Category" that it is a "Sabermetric Batting" statistic. You would like to see what each player's "WAR" is on the Cleveland Guardians (CLE). Find the WAR for all players on the Cleveland Guardians in any year.
 You remember that this web application contains advanced pitching statistics. You decide that you want to see how well pitchers advanced pitching statistics were in 2021. Find the advanced

- pitching statistics recorded in 2021.

 7. You forgot what teams have won the World Series in the past few years. Find the World Series
- Champions for the past few seasons.

 You want to know if there is any correlation between the amount of money that a team spe
- You want to know if there is any correlation between the amount of money that a team spends of their roster and team success. Find out where you can gain insight on if there is any correlation between team payroll and season outcome.
- 9. You just remembered that you would like to know what players won awards in the

Results

- All survey questions received an average response of 4.0+
- Most users agreed that the design was easy to navigate, encouraged readability, that they would use the application, and recommend it to others
- Users had a great experience with most liking the glossary page and amount of data provided
- Users suggested adding page descriptions, more data, a search box for statistics, and changing colors

Post-Test Evaluation Circle the choice that best describes yourself. Scale: 1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly. 1. I had no trouble understanding what this application's purpose is. 1 2 3 4 5 2. The buttons in this application clearly inform what is being clicked on. 1 2 3 4 5 3. I had no trouble navigating the application and finding player statistics. 1 2 3 4 5 4. I had no trouble navigating the application and finding team statistics. 1 2 3 4 5 5. I had no trouble navigating through the application without assistance. 1 2 3 4 5 6. The statistic tables are displayed in a readable and understandable manner. 1 2 3 4 5 7. The use of colors for this web application contrast well and encourages readal 1 2 3 4 5 8. The titles on each web page are clear and relate to what is being shown below 1 2 3 4 5 9. I would recommend this application to someone interested in this sport. 1 2 3 4 5 10. I would use this application frequently if it was available to me. 1 2 3 4 5 Open-Ended Questions

Answer the following questions in one sentence or more.

1. How was your overall experience with this application?

2. What are two things you liked the most about this application?

3. What are two things that could be improved in this application?

Future Work

If I were to continue working on this project, there are a few possible changes that I would make to the design:

- Add more web page descriptions to statistic pages
- Add several more seasons of statistic data
- Add a search box for users to find specific statistics easier
- Add links in table headers to the definitions of statistics
- Add more statistic comparisons