# Baseball Player Batting Performance Data Visualization Report

## Summary

In this project, I will be analyzing and creating visualizations with the baseball dataset provided by Udacity which has height (in.), weight (lbs.), handedness, batting average, and homeruns data for 1157 baseball players. Using Tableau I have analyzed the relationships between variables and created visuals to communicate my findings and insights about factors that affect player performance. In this dataset, I have found that height and weight have an affect on the player's batting average and the number of homeruns. As the player weight increases the batting average decreases and average homeruns increases and as player height increases both batting average and average homeruns decrease.

## Design

First version:

https://public.tableau.com/shared/H4WGBTK66?:display_count=yes

I chose to explore relationships between variables that would help determine if certain characteristics of a player led to better batting average and more home runs.

1) I used a scatterplot to see if there were any relationships between batting average and homeruns. I also removed some outliers at the 0 intersect to have a better view of the plot.
2) I chose to use a pie chart to show the proportions of handedness in the dataset. Since there were only 3 types of handedness, a pie chart can easily display this data.
3) I used a bar chart to show the difference in amount of home runs by handedness.
4) I used a bar chart with a drop down filter for handedness to display the players with the most homeruns.
5) I created a dashboard that shows the relationship between weight vs batting average and weight vs average homeruns. I used a bar chart to show the number of players in each weight bin and on the secondary vertical axis I used a line graph to display the batting average and average homeruns.
6) I created a dashboard that shows the relationship between height vs batting average and height vs average homeruns. I used a bar chart to show the number of players in each height bin and on the secondary vertical axis I used a line graph to display the batting average and average homeruns.

Final version:
https://public.tableau.com/views/udacity_DAND_baseball_project_v3/Story1?:embed=y&:display_count=yes&publish=yes

1) I changed the axis label from HR to "Homeruns (HR)" to be more clear
2) To make it clear what the pie chart was showing, I also added the handedness to the chart label directly on each section of the pie chart.

3) For the Avg Homeruns by handedness bar chart I added color to the bars to create more differentiation between the bars and I also added the data labels to show the average homeruns by each handedness.
4) To create a more condensed visualization I limited the player list by most homeruns to the top 25 players. I also added color to the bars to show which handedness the player is. I also added all the player stats in the detail pop-up window that appears when hovering over the bars on the chart
5) Weight Dashboard- I added individual lines for each handedness and changed the color of the bar chart to be more neutral so the colored lines are the focus.
6) Height Dashboard- I added individual lines for each handedness and changed the color of the bar chart to be more neutral so the colored lines are the focus.

Feedback:

- Confusion on what HR means. Change HR axis label to “Homeruns”.
- Add handedness to pie chart label
- Add color to bar chart and data labels
- Change player name visual to top 25 players
- Add more data in the player detail and add color for handedness
- Add separate lines for handedness on the Weight Dashboard
- Add separate lines for handedness on the Height Dashboard