

Thank you for your interest in the Toronto Blue Jays. As a next step, we'd like you to complete a technical exercise using baseball data. Below are two prompts; please choose **ONE** to address. When returning your response, please include the code for your model in a .txt file along with a PDF detailing your answers.

Question 1: Pitch Command

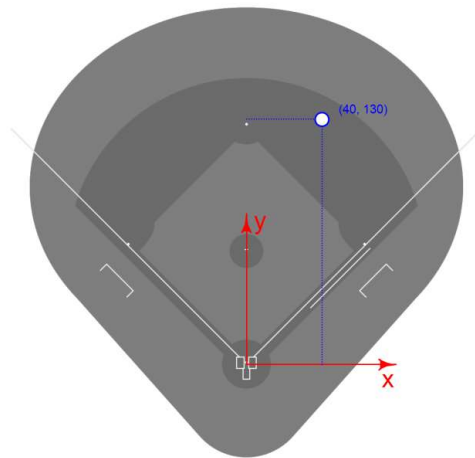
The attached dataset *fastballcommand.xlsx* contains metadata, pitch attributes, and pitch locations for every fastball thrown by five different ML starters between 2018 and 2020.

Please answer the following questions:

1. Which pitcher had the best fastball command? How did you determine this?
2. If you wanted to create a fastball command metric that could be applied to any pitcher at any level, how might you go about doing so?

Question 2: Shortstop Defense

The attached dataset *shortstopdefense.xlsx* has one row per in-play ground ball event for a subset of Major League games. In addition to metadata and the batted ball parameters, the data includes player location tracking plotted on the x/y plane (in feet), where home plate corresponds with (0,0). See the figure below for further reference:



Using this dataset, please answer the question “which shortstop converted the most outs above average?”. Along with annotated code, please present a leaderboard of your results including the playerid, number of opportunities, and the outs above average. In addition, please answer the following questions:

- 1) In addition to what's included in the provided dataset, what variables or types of information do you think would be helpful in answering this question more effectively?
- 2) Other than the final leaderboard, what is one interesting or surprising finding you made?

Please don't hesitate to reach out if you have any questions about variable definitions, measurements, or the structure of the underlying datasets for either prompt.