



# Pitcher Efficiency

36-493: Sports Analytics Capstone  
Taylor Cammarata, Steven Lu, Max Schussler



## 1. Introduction

Our **client** Monica Harrison, CMU softball coach, wanted a more efficient way to fill out a pitcher evaluation form.

Our **goal** was to create an app to input pitching data during a game. After the game using the same app pitcher efficiency result would be generated automatically. This will save time and energy for the coaching staff as results will be automatically generated.

## 2. Current Data Collection

Current pitcher evaluation chart that we will be replicating based on data collected

**Pitching Evaluation**

Pitcher Name: \_\_\_\_\_ Date: \_\_\_\_\_ Opponent: \_\_\_\_\_

**Game Management:**

Number of Batters Faced: \_\_\_\_\_ At Bats: \_\_\_\_\_  
Number of Pitches: \_\_\_\_\_  
How Many Strikes: \_\_\_\_\_ How Many Balls: \_\_\_\_\_

How Many 0-2 Hits: \_\_\_\_\_ How Many 1-2 Hits: \_\_\_\_\_

Strike Outs: \_\_\_\_\_ Walks: \_\_\_\_\_ Hits: \_\_\_\_\_ HBP: \_\_\_\_\_

Curve Ball – Total: \_\_\_\_\_ For a Strike: \_\_\_\_\_ For a Ball: \_\_\_\_\_ Strike %: \_\_\_\_\_  
Screw Ball – Total: \_\_\_\_\_ For a Strike: \_\_\_\_\_ For a Ball: \_\_\_\_\_ Strike %: \_\_\_\_\_  
Drop Curve – Total: \_\_\_\_\_ For a Strike: \_\_\_\_\_ For a Ball: \_\_\_\_\_ Strike %: \_\_\_\_\_  
Drop Inside – Total: \_\_\_\_\_ For a Strike: \_\_\_\_\_ For a Ball: \_\_\_\_\_ Strike %: \_\_\_\_\_  
Drop Outside – Total: \_\_\_\_\_ For a Strike: \_\_\_\_\_ For a Ball: \_\_\_\_\_ Strike %: \_\_\_\_\_  
Change Up – Total: \_\_\_\_\_ For a Strike: \_\_\_\_\_ For a Ball: \_\_\_\_\_ Strike %: \_\_\_\_\_  
Rise Ball – Total: \_\_\_\_\_ For a Strike: \_\_\_\_\_ For a Ball: \_\_\_\_\_ Strike %: \_\_\_\_\_  
FastBall – Total: \_\_\_\_\_ For a Strike: \_\_\_\_\_ For a Ball: \_\_\_\_\_ Strike %: \_\_\_\_\_

Inning	1	2	3	4	5	6	7	8	9	Totals
Lead off Out										
1, 2, 3 Inning										

**Mental Toughness:**

Retire Next Batter Following a Hit: \_\_\_\_\_ / \_\_\_\_\_  
Retire Next Batter Following a BB: \_\_\_\_\_ / \_\_\_\_\_  
Retire Next Batter Following a Error: \_\_\_\_\_ / \_\_\_\_\_  
Leadoff BB Scored: \_\_\_\_\_ / \_\_\_\_\_ 4 Pitch BB: \_\_\_\_\_  
Retire First Batter in Relief: Y / N



# Pitcher Efficiency

36-493: Sports Analytics Capstone  
Taylor Cammarata, Steven Lu, Max Schussler



# DEMO



# Pitcher Efficiency

36-493: Sports Analytics Capstone  
Taylor Cammarata, Steven Lu, Max Schussler



## Conclusion

The app that we were able to create successfully satisfies many of our client's needs:

- Automate data input process and generation of pitcher evaluation.
- Visualize data using heat maps and coordinate systems.
- Allows for client to collect more detailed data
- Convenient tables for easy subsetting and access.

## Next Steps

- Give predictive models for strike probability to eliminate room for umpire error
- Give predictive suggestions to the app that would allow for data entry to be performed more efficiently
- Automate the process of obtaining coordinate data using hardware
- Add additional statistics within results tables, including mental toughness stats