

## Outline

Goal of Project

Client

What is a Heatmap?

Characteristics

Defining Factors

Methods of Accomplishment

Issues

### Goal

- ♦ Give reliable data to hitters
- ♦ Establish patterns for hitters to look for while at the plate
- ♦ Give a color-coded indication of the strike zone

### Client

- ♦ JCS high school varsity baseball
- ♦ The programs that are available cost upward of \$35000
- Allow the batters to develop a scouting report on themselves

## What is a Heatmap

- A heatmap in the context of baseball refers to a color-coded strike zone
- ♦ The colors on the strike zone are determined by the performance of the hitter in the specified locations.

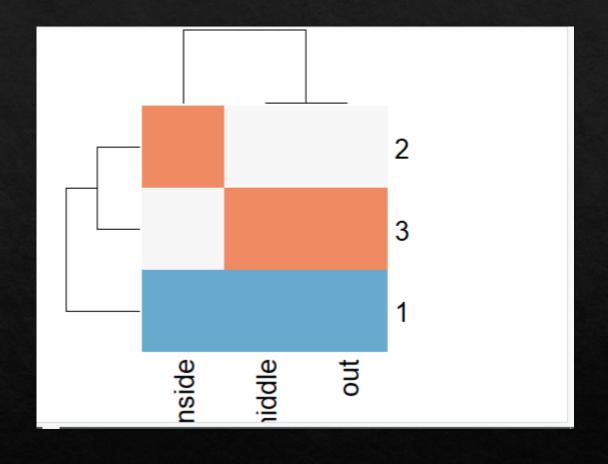
### Characteristics

- ♦ The program is written in R
- ♦ R is a statistical computing and graphics language
- ♦ R is used by analysists for MLB to track sabermetrics

## Defining Factors

- ♦ The Strike zone is defined by the numbers 1-9
- ♦ If a hitter is batting over .300 the zone is red
- ♦ White is the area between .200 .300
- ♦ If a hitter is batting below .200 the zone is blue

This is the result of the of the 3x3 strike zone with data



# Defining Factors

- ♦ Pitch type
- ♦ Pitch location
- Right/Left-handed pitcher
- ♦ Count

## Methods of Accomplishment

- ♦ Testing
  - ♦ Using data from MLB to ensure program works
- ♦ Tracking data
  - ♦ Keeping a running log of accurate data

### Issues

- Defining balls
- ♦ The players asked for a way to only see frequency of pitches thrown
- Defining a successful at bat

## Defining Balls

- ♦ Ball- is a pitch not thrown in one of the 9 zones
- ♦ Zones 10-13 are used to track balls not ruled a strike
- ♦ These zones help hitters to identify where their weakness are

# Frequency Charts

- Using bar graphs
- Hitters were able to decide which pitches to look for

This is sample data gathered to create a frequency chart in order to make sure the customer was satisfied with the result of the frequency chart.

4	Α	В	С	D	E	F	G	Н	1	J	K	L
1	0-0	0-1	0-2	1-1	1-2	1-0	2-0	3-0	2-1	2-2	3-1	3-2
2	FB	BB	CH	FB	ВВ	BB	FB	FB	CH	BB	FB	FB
3	BB	FB	FB	FB	ВВ	FB	FB	FB	FB	FB	FB	ВВ
4	FB	CH	BB	CH	ВВ	FB	FB	FB	FB	BB	FB	CH
5	FB	FB	CH	ВВ	ВВ	FB	BB	FB	FB	CH	CH	CH
6	CH	FB	BB	ВВ	FB	FB	BB	FB	FB	BB	FB	ВВ
7	FB	FB	CH	ВВ	CH	FB	BB	FB	ВВ	BB	FB	ВВ
8	FB	ВВ	BB	CH	CH	CH	CH	FB	FB	CH	ВВ	FB
9	FB	ВВ	FB	CH	CH	FB	CH	FB	ВВ	ВВ	FB	ВВ
10	FB	CH	ВВ	FB	ВВ	ВВ	CH	FB	ВВ	FB	FB	ВВ
11	FB	CH	CH	FB	ВВ	CH	CH	FB	СН	ВВ	FB	FB
12	ВВ	FB	ВВ	FB	ВВ	FB	CH	FB	FB	CH	FB	FB
13	FB	ВВ	ВВ	FB	FB	FB	CH	FB	FB	ВВ	FB	CH
14	FB	ВВ	FB	ВВ	FB	FB	FB	FB	FB	ВВ	ВВ	FB
15	ВВ	FB	ВВ	CH	CH	FB	ВВ	FB	FB	CH	ВВ	FB
16	FB	FB	ВВ	FB	FB	CH	FB	FB	ВВ	ВВ	СН	ВВ
17	ВВ	FB	FB	FB	FB	ВВ	FB	FB	ВВ	FB	FB	CH
18	FB	FB	FB	FB	ВВ	CH	CH	FB	СН	ВВ	FB	FB
19	FB	FB	CH	FB	ВВ	FB	FB	FB	FB	CH	FB	FB
20	FB	ВВ	FB	FB	ВВ	FB	FB	FB	FB	ВВ	FB	FB
21												
22												
23												
24												

### Successful At Bat

- ♦ For this program, a hit is a successful at bat
- ♦ This program could have the flexibility to track hard hits
- Velocity off the bat

Questions?