



DATA VISUALIZATION



UNIT - IV (PART - I)



Proportion & Percentage

- A **proportion** is a ratio in which the numerator is a partial amount, and the denominator is the total amount (expressed as a number between 0 and 1).
 - For example, the proportion of the NYC population living in the Bronx is 0.169. A proportion is expressed as a number between 0 and 1.
- A **percentage** is a ratio comparing a number to 100.
 - For example, 16.9% of NYC residents live in the Bronx. A percentage is generally a number between 0 and 100, but can be larger than 100 (e.g., “sales have increased by 150% year-over-year”).



A step in the process

- They are most often used to communicate three different types of comparisons:
 1. Part-to-whole
 2. Current-to-historical
 3. Actual-to-target



Proportions and Percentages

1

Part to whole

2

Current to historical

3

Actual to target

4

Mean and Median



Part to whole

- A part to whole analogy is defined as a comparison between a part and a whole of one thing and how it is like a part and a whole of another thing

- For example, Fin : Fish :: Wing : Bird is a part to whole analogy and works because it demonstrates that just as a fish uses a fin to move, so too does a bird use a wing to move.
- Followers of the sport of baseball have long been fascinated with proportions of outcomes (called stats).

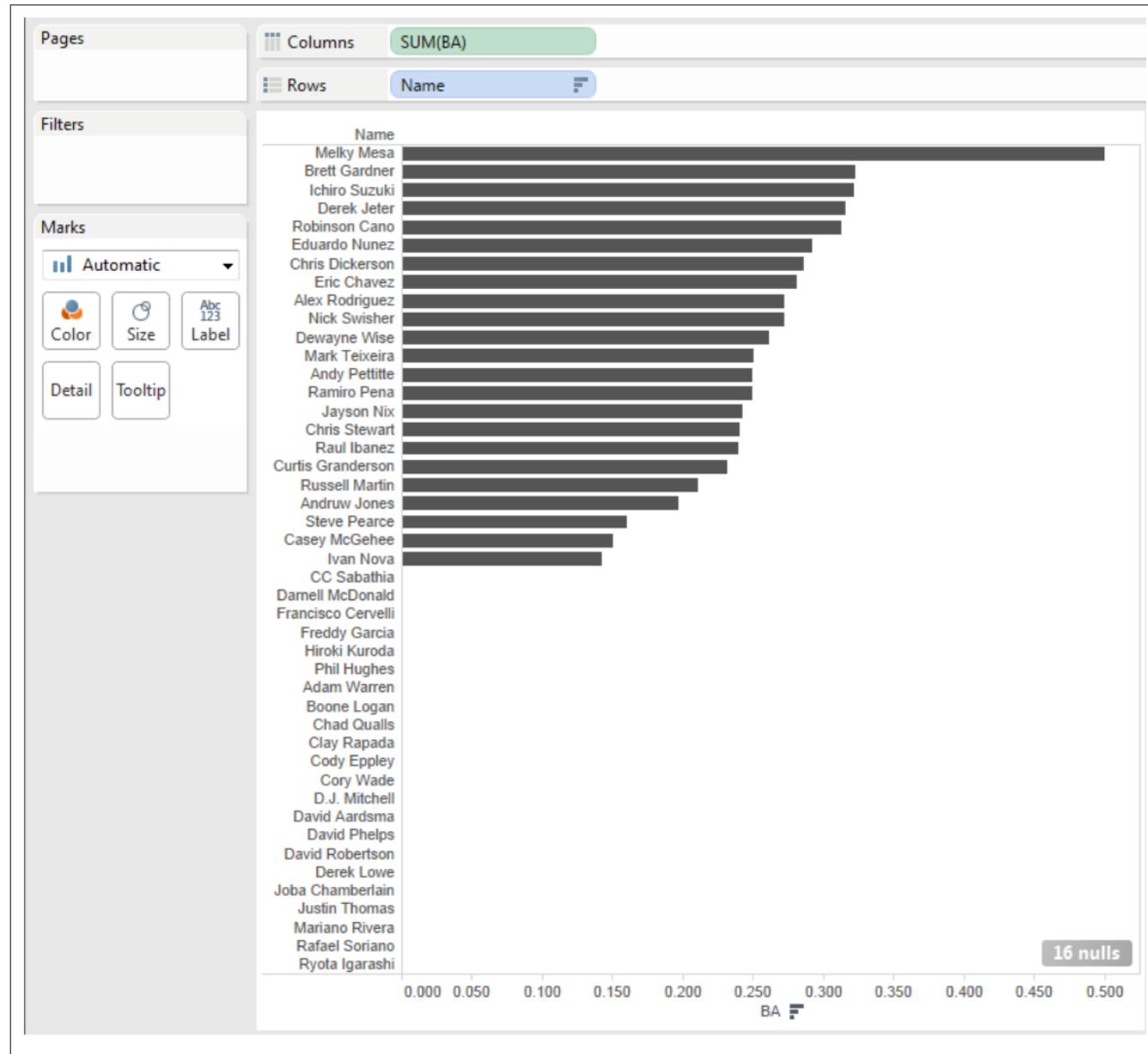


Figure 5-1. Bar chart showing BA for every Yankee with at least one at bat in 2012

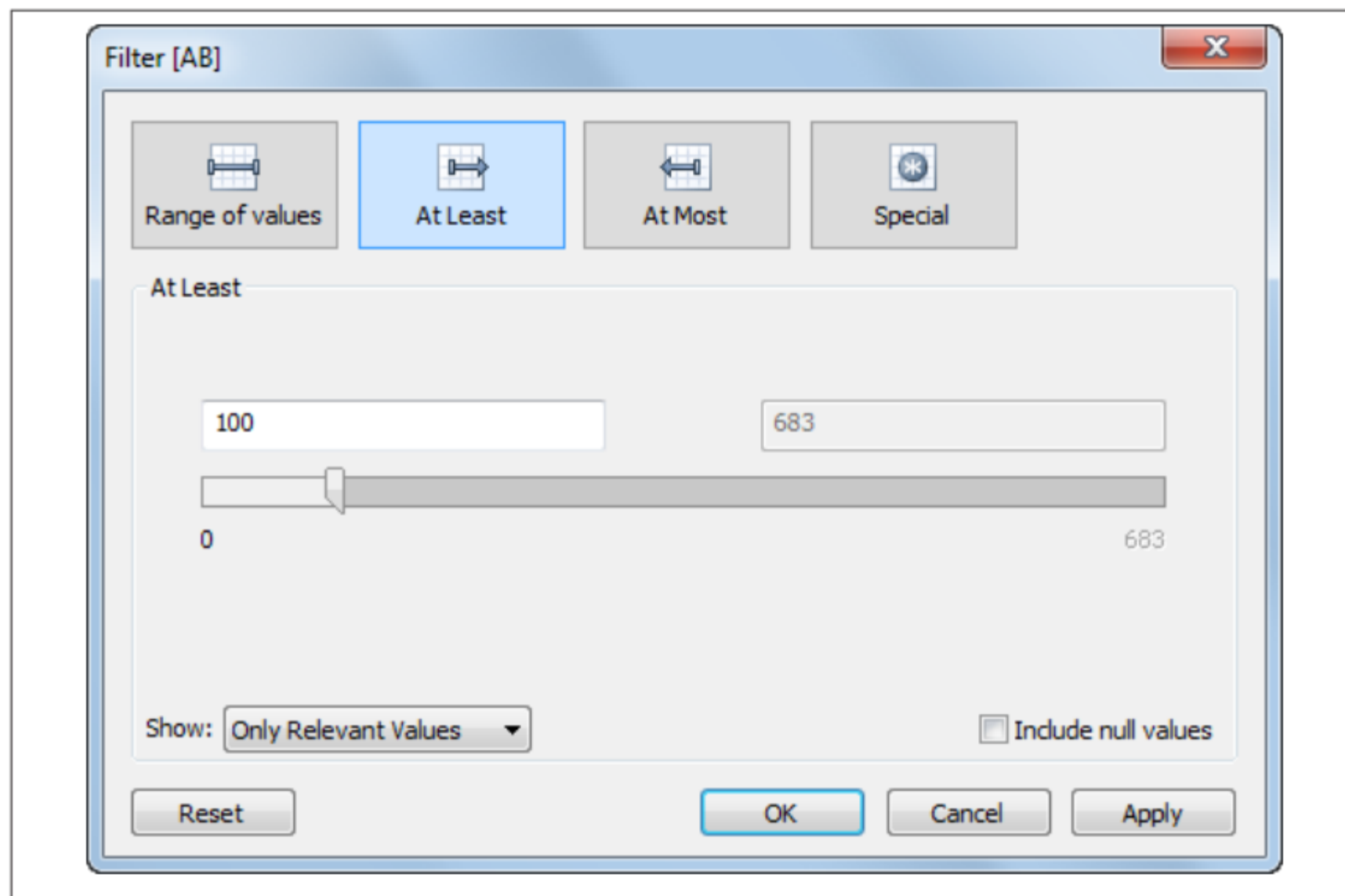


Figure 5-2. Filtering the BA bar chart to show only players with at least 100 at bats

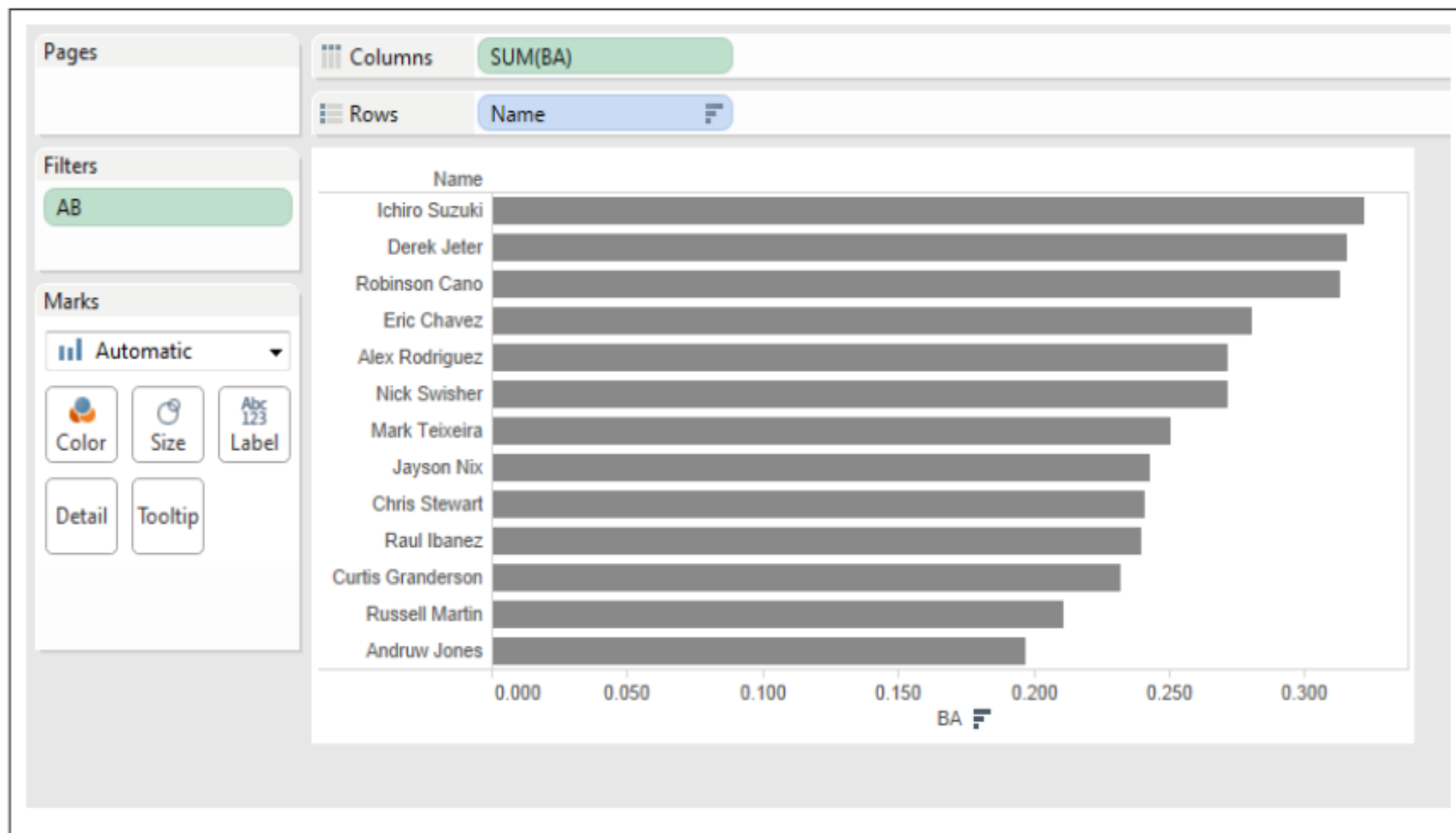


Figure 5-3. The filtered BA bar chart

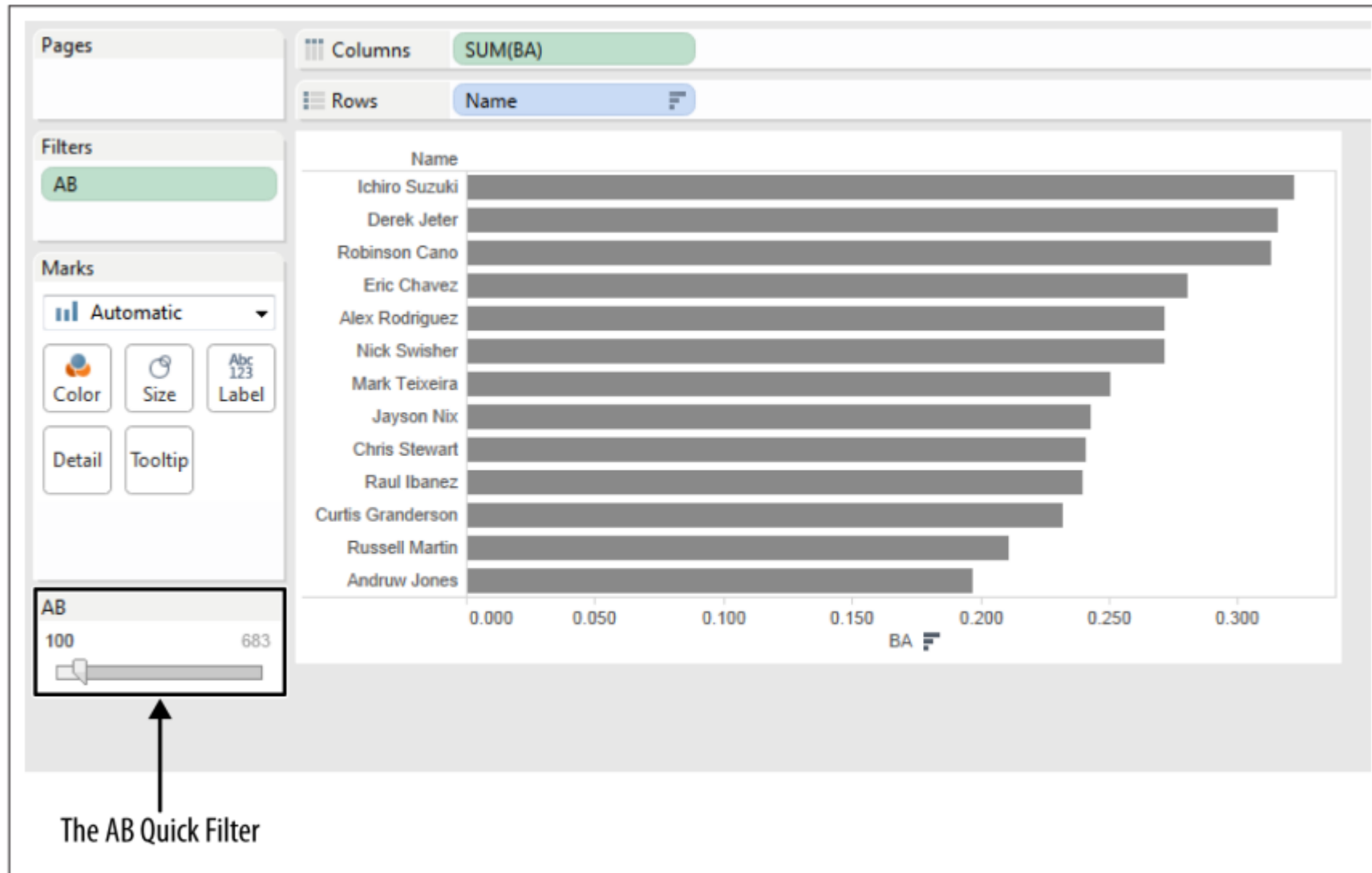


Figure 5-4. The AB Quick Filter added to the Sheet

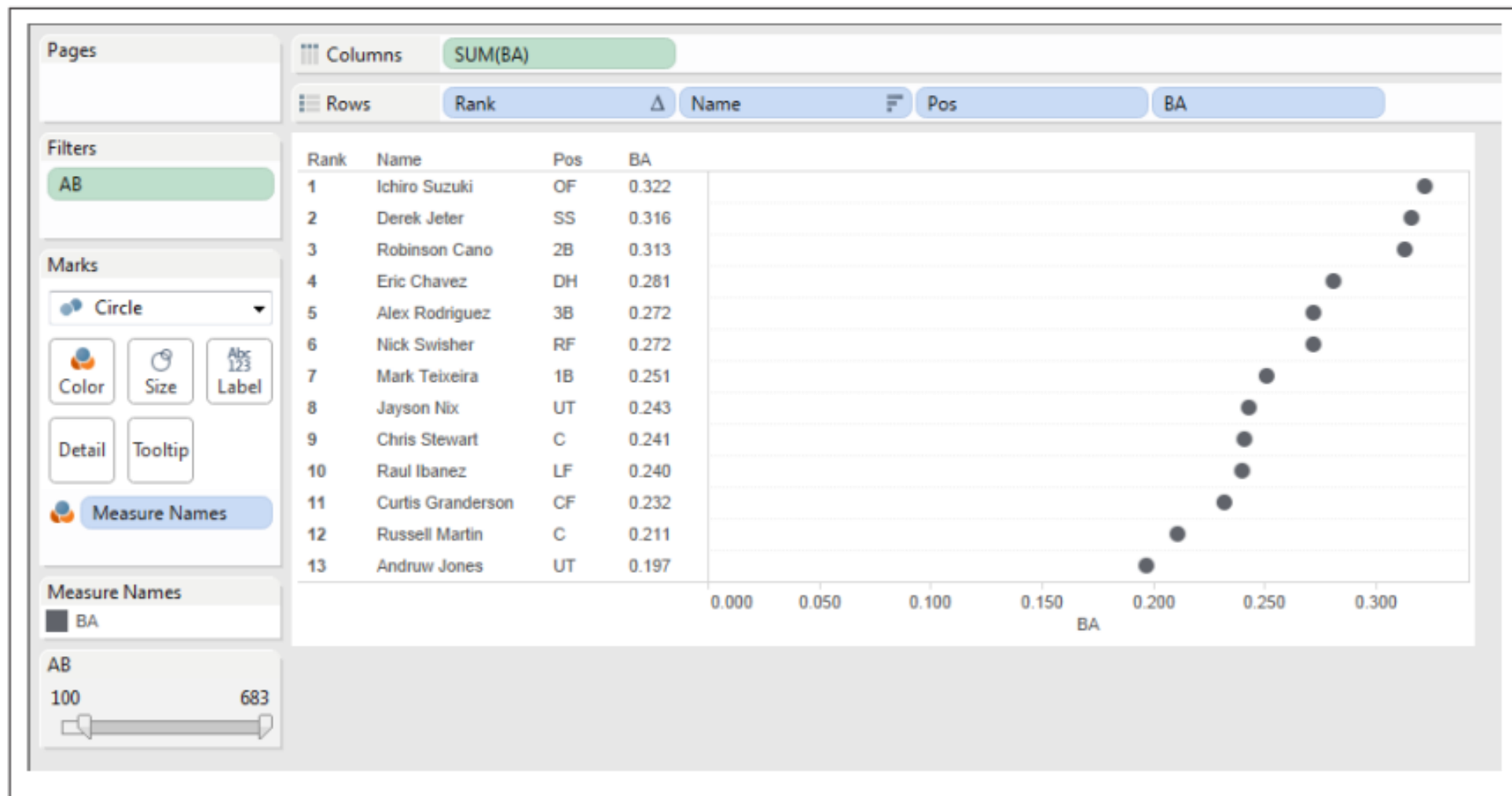


Figure 5-5. Batting average dot chart

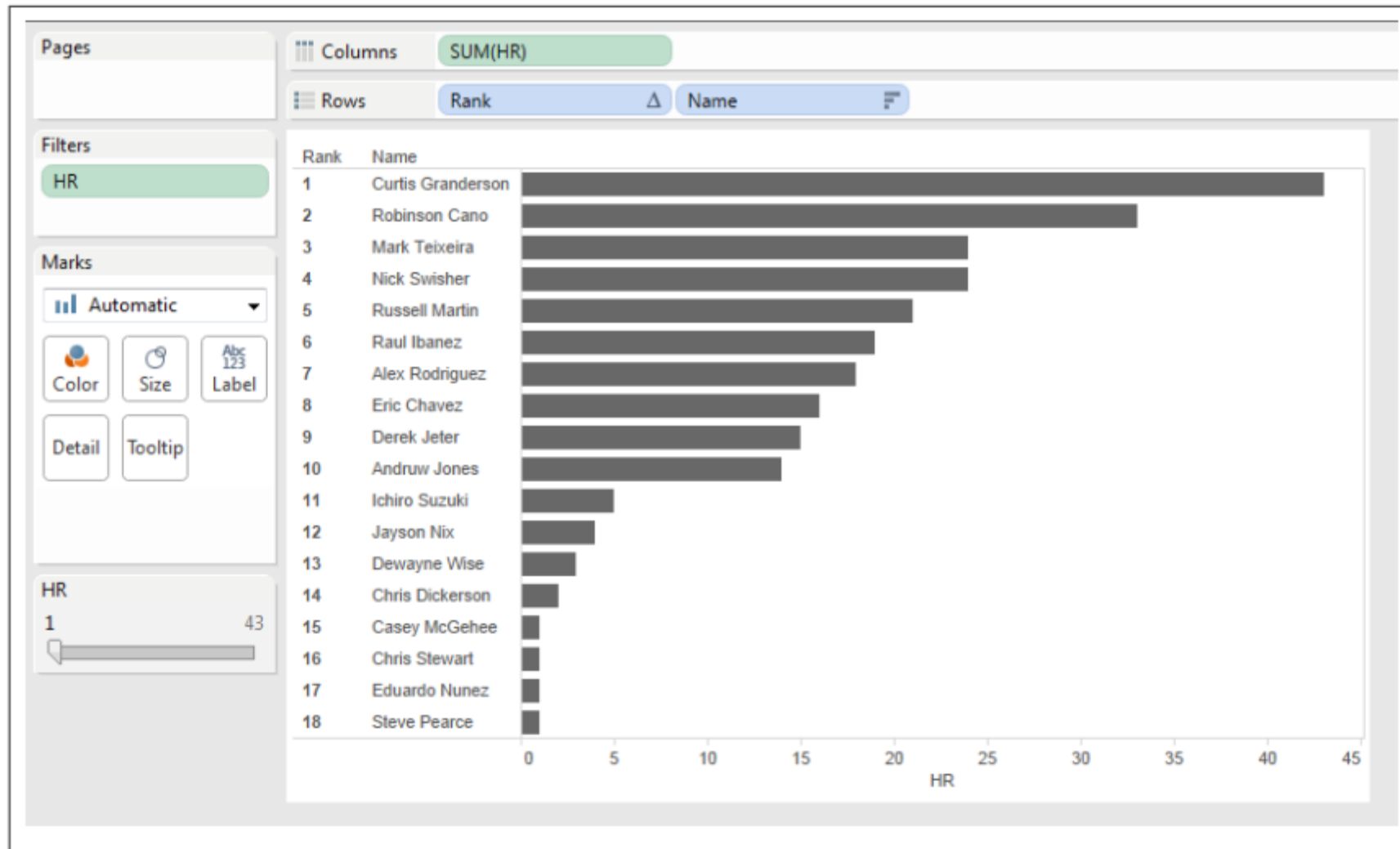


Figure 5-6. Bar chart showing Yankees in 2012 with at least one home run

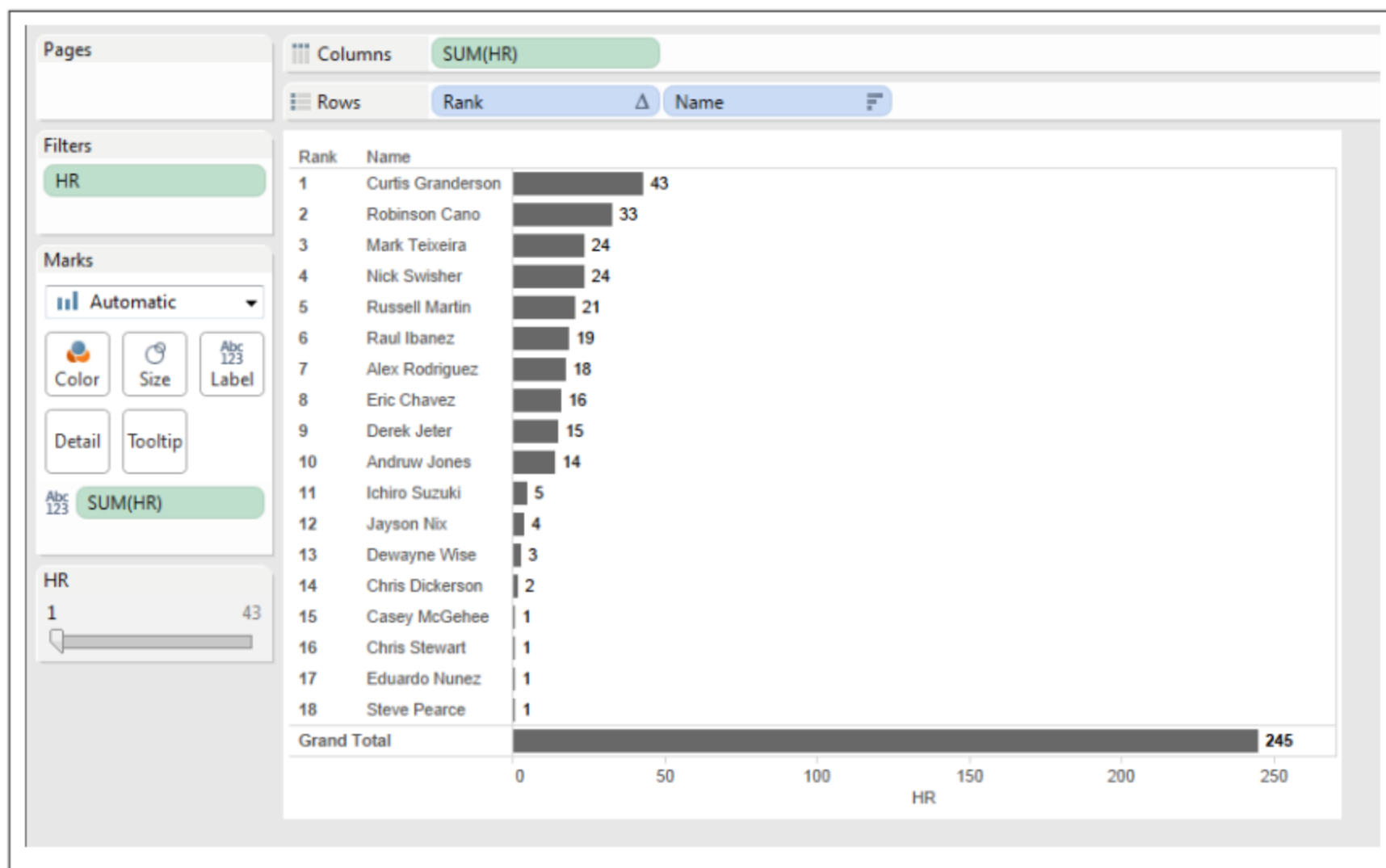


Figure 5-7. Home run bar chart with team total added

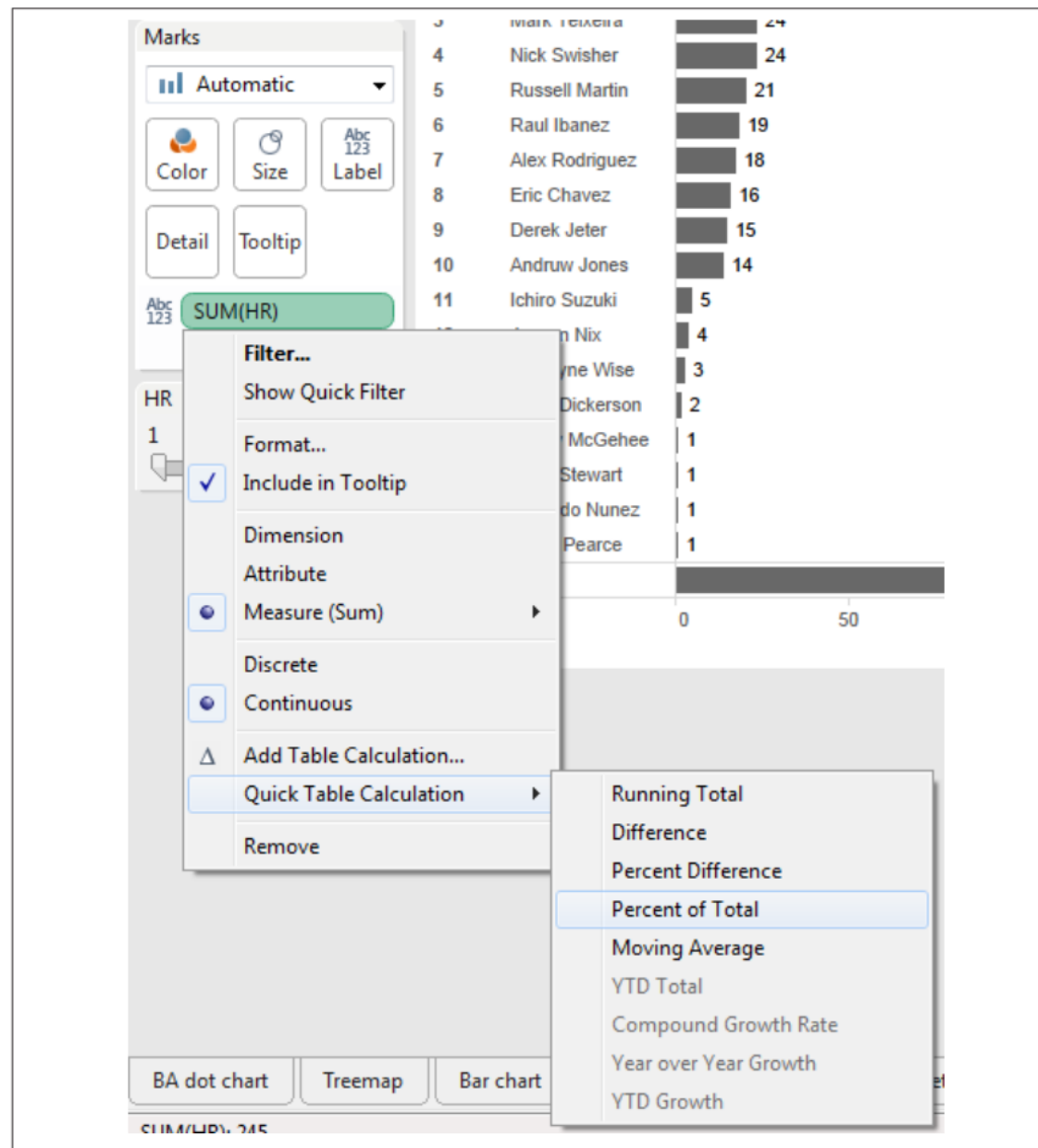


Figure 5-8. Changing the label to a “Percent of Total” table calculation

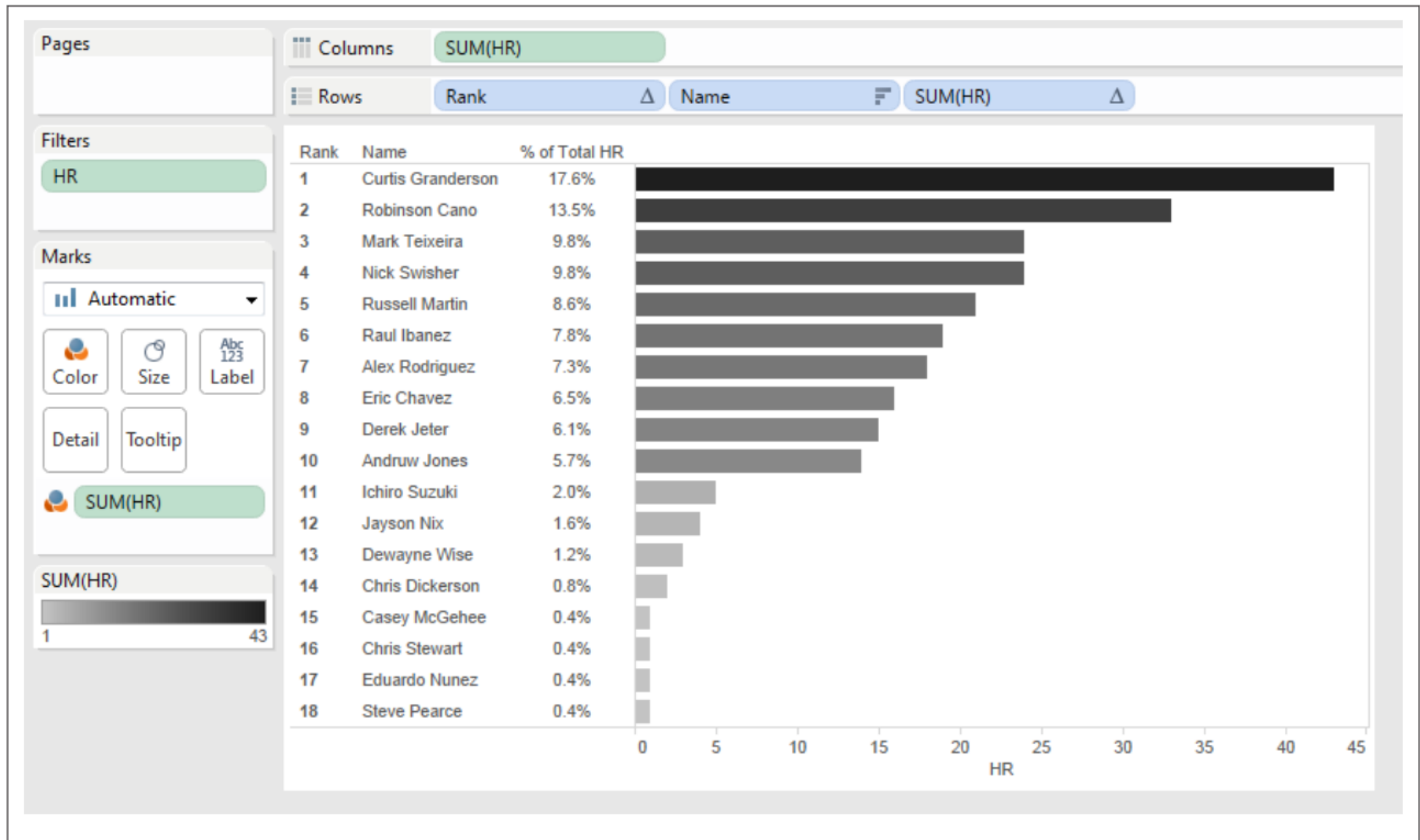
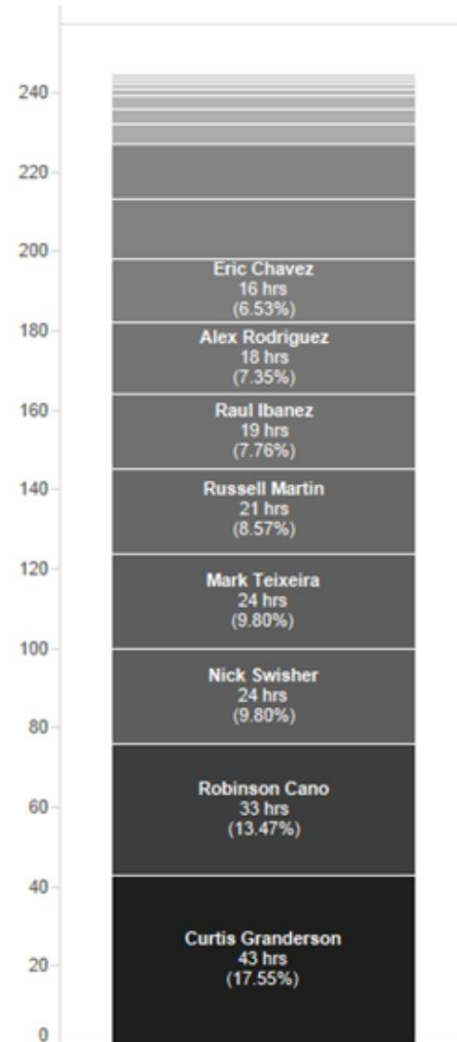
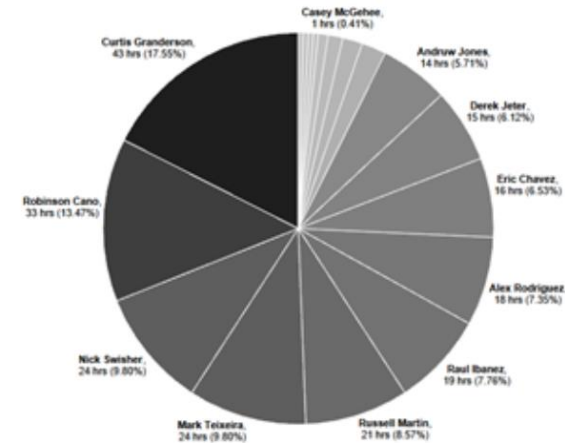


Figure 5-9. Home run tallies with labels shown as Percent of Total

1. Stacked bar



2. Pie chart



3. Treemap

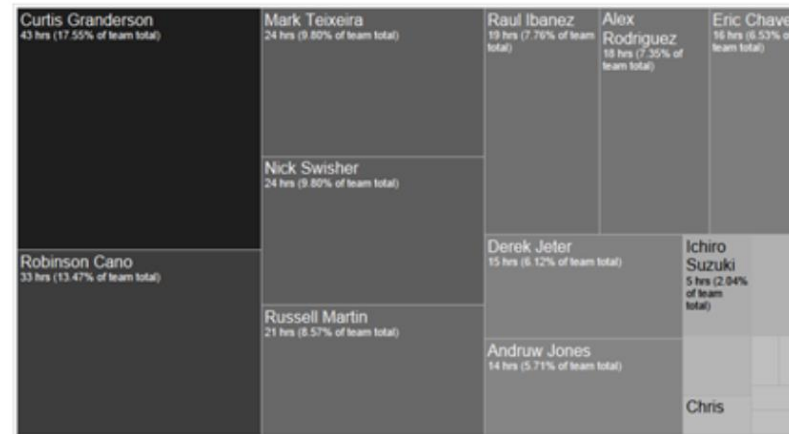


Figure 5-10. Three alternative ways to show the proportion of home runs hit by each player

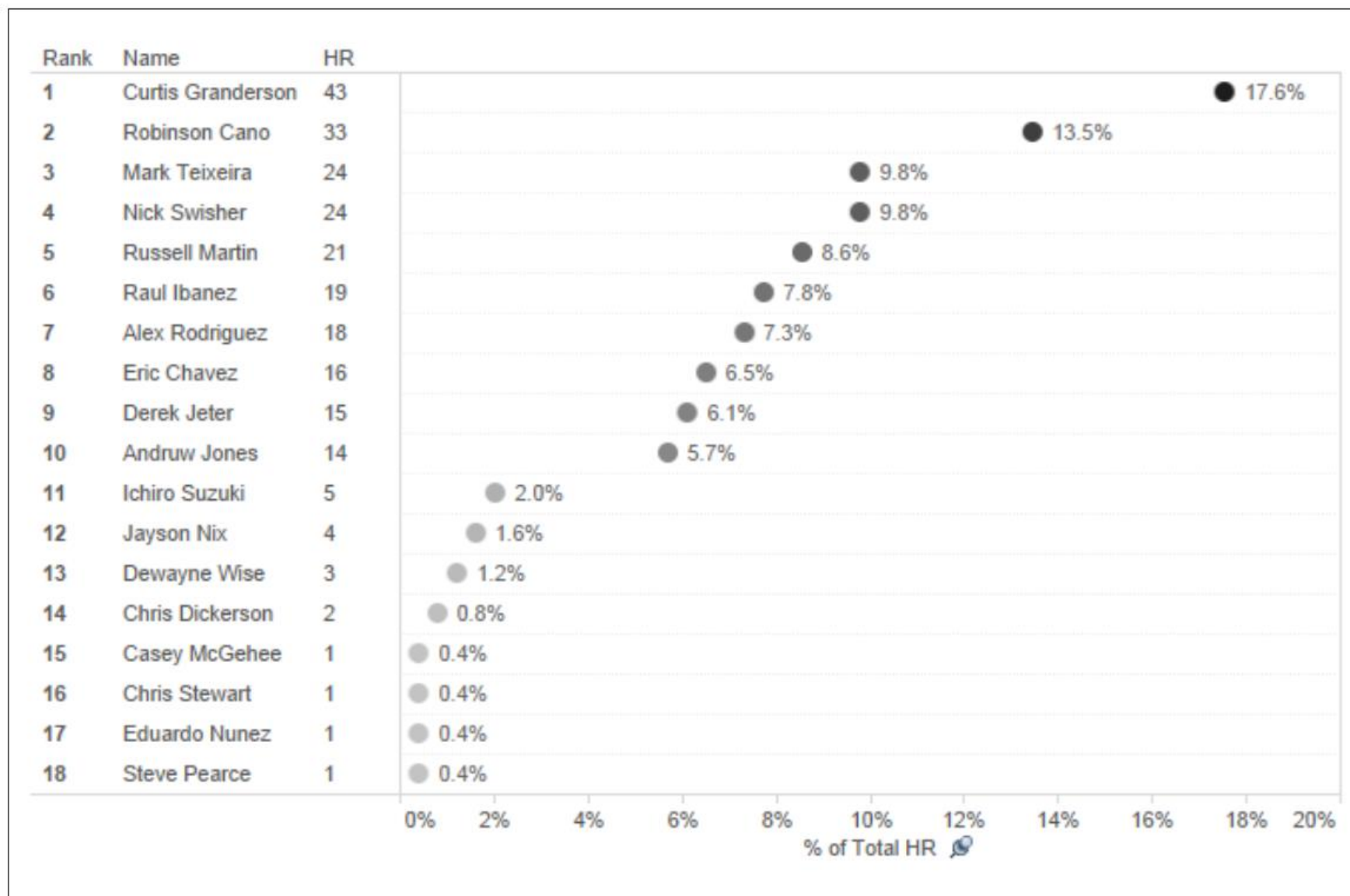


Figure 5-11. Dot chart of percentage of home runs contributed by each player

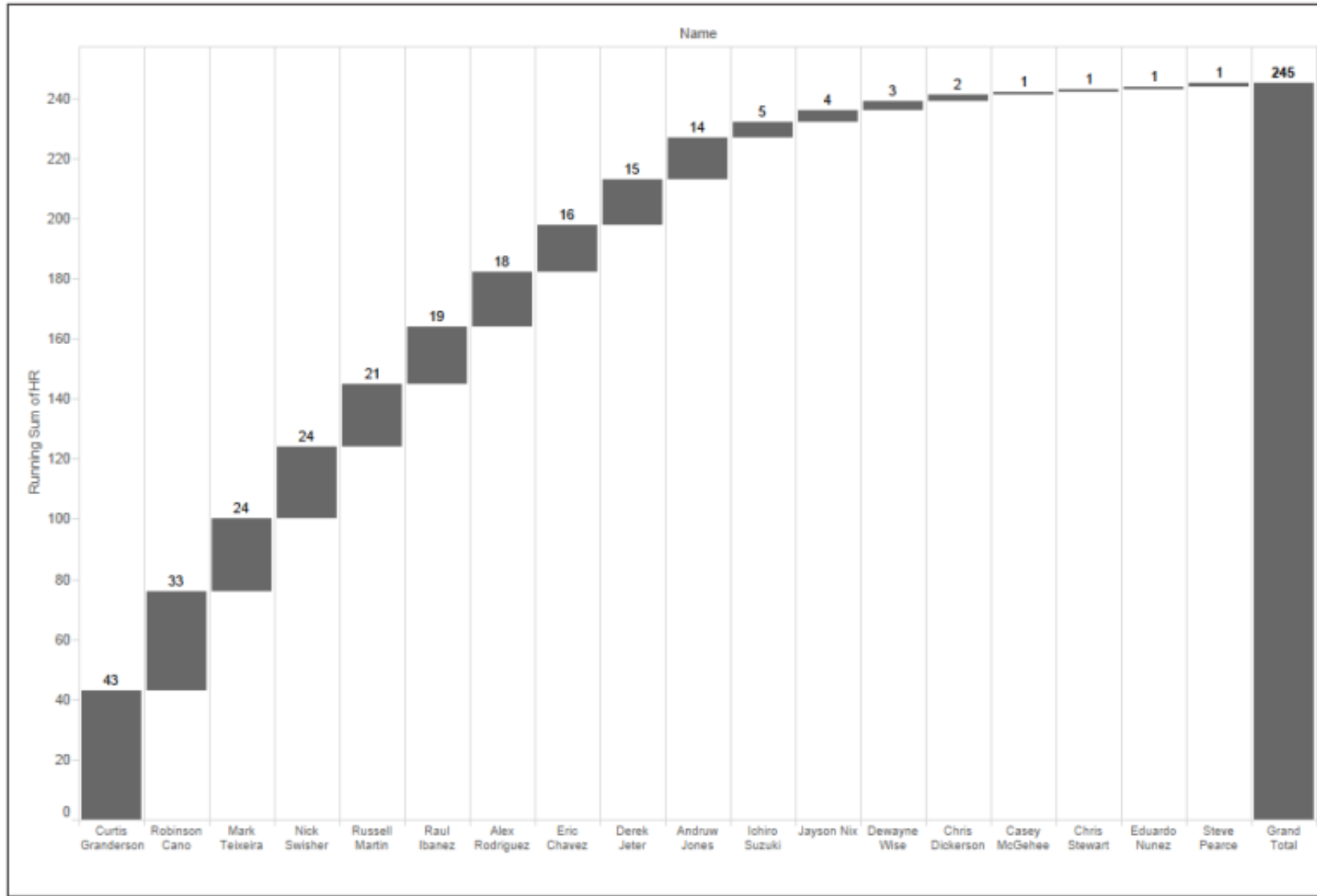


Figure 5-12. Home run data as a waterfall chart



Proportions and Percentages

1

Part to whole

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