

One source of data for this lab is the public Lahman database which contains a number of data sets with different units of observation. Below are the first few rows and some of the columns for two of these data sets: Teams and Batting. They contain data going back to 1871. Use these excerpts to help you answer the following questions.

| yearID | teamID | franchID | G | W | L | R | RA | name |
|--------|--------|----------|-----|----|-----|------|-----|----------------------|
| 2014 | NYA | NYN | 162 | 84 | 78 | 633 | 664 | New York Yankees |
| 2013 | WAS | WSN | 162 | 86 | 76 | 656 | 626 | Washington Nationals |
| 1997 | NYA | NYN | 162 | 96 | 66 | 891 | 688 | New York Yankees |
| 1981 | PIT | PIT | 103 | 46 | 56 | 407 | 425 | Pittsburgh Pirates |
| 1931 | NYA | NYN | 155 | 94 | 59 | 1067 | 760 | New York Yankees |
| 1928 | BSN | ATL | 153 | 50 | 103 | 631 | 878 | Boston Braves |

| playerID | yearID | teamID | G | AB | R | H | BB | SO |
|-----------|--------|--------|-----|-----|----|-----|----|----|
| hammeja01 | 2016 | CHN | 35 | 65 | 6 | 16 | 1 | 24 |
| mcewijo01 | 2002 | NYN | 105 | 196 | 22 | 39 | 9 | 50 |
| jeffcmi01 | 1985 | CLE | 9 | 0 | 0 | 0 | 0 | 0 |
| richmbe01 | 1933 | CHN | 5 | 1 | 0 | 0 | 0 | 0 |
| cooneji02 | 1925 | SLN | 54 | 187 | 27 | 51 | 4 | 5 |
| mcinnst01 | 1919 | BOS | 120 | 440 | 32 | 134 | 23 | 11 |

1. What is the unit of observation for the Teams data set? What about for the Batting data set?
2. Write out two questions about baseball that could answered purely through *summaries* of these data sets (numerical summaries or plots).
3. Write out *predictive* questions (two classification and two regression) that you could answer about baseball using the data sets above. Identify a response variable for each.

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7. Some people believe analytics is ruining baseball because Teams are more cautious which makes the games less entertaining. Do you agree or disagree? Why? Answer in two or more sentences.