

**Lab Exercise 4 (Descriptive Statistics)**

IT2110 - Probability &amp; Statistics

Week 04

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Major League Baseball is known as “America’s pastime.” The role of Major League Baseball has been ingrained into American culture. The heroic figures and memorable moments of Major League Baseball reflect the type of attitude that American culture is built on. Given below are some measurements observed in this significant sport during the 1998 league.

X1 = Team Attendance

(Average number of spectators for a match that the team play)

X2 = Team Salary

(Earning of the team)

X3 = Years

(Years since the team has owned a stadium)

1. Identify the variables and enter the given data set into R.
2. Obtain the following for each variable
  - a. Box-Plot, Histogram and Stem-Leaf Plot.
  - b. Mean, Median and Standard Deviation.
  - c. First and Third Quartile.
  - d. Interquartile Range.
3. Write a function to find the modes of a given set of values. Check the function by finding the mode of the variable “Years”.
4. Write a function that would produce the outliers when the values are given. Check the function with the 3 variables in the dataset.

| <b>Team</b>           | <b>Team Attendance (X<sub>1</sub>)</b> | <b>Team Salary (X<sub>2</sub>)</b> | <b>Years (X<sub>3</sub>)</b> |
|-----------------------|--|------------------------------------|------------------------------|
| Atlanta Braves        | 3.361                                  | 59.536                             | 3                            |
| New York Mets         | 2.288                                  | 49.518                             | 35                           |
| Philadelphia Phillies | 1.716                                  | 34.370                             | 28                           |
| Florida Marlins       | 0.914                                  | 9.162                              | 23                           |
| Houston Astros        | 1.750                                  | 33.434                             | 12                           |
| Chicago Cubs          | 2.450                                  | 40.629                             | 34                           |
| St. Louis Cardinals   | 2.623                                  | 49.433                             | 85                           |
| Cincinnati Reds       | 3.195                                  | 52.575                             | 33                           |
| Milwaukee Brewers     | 1.794                                  | 21.995                             | 29                           |
| Pittsburgh Pirates    | 1.812                                  | 32.393                             | 46                           |
| San Diego Padres      | 1.561                                  | 13.352                             | 29                           |
| San Francisco Giants  | 2.556                                  | 45.368                             | 32                           |
| Colorado Rockies      | 1.926                                  | 40.571                             | 39                           |
| Arizona Diamondbacks  | 3.089                                  | 47.970                             | 37                           |
| New York Yankees      | 3.789                                  | 47.435                             | 4                            |
| Boston Red Sox        | 3.603                                  | 30.572                             | 1                            |
| Toronto Blue jays     | 2.950                                  | 63.461                             | 76                           |
| Baltimore Orioles     | 2.344                                  | 51.647                             | 87                           |
| Tampa Bay Devil       | 2.454                                  | 48.666                             | 10                           |
| Cleveland Indians     | 3.685                                  | 68.988                             | 7                            |
| Chicago White Sox     | 2.506                                  | 25.318                             | 9                            |
| Kansas City Royals    | 3.467                                  | 59.584                             | 5                            |
| Minnesota Twins       | 1.391                                  | 36.840                             | 8                            |
| Detroit Tigers        | 1.495                                  | 32.963                             | 26                           |
| Texas Rangers         | 1.166                                  | 26.183                             | 17                           |
| Anaheim Angels        | 1.409                                  | 22.725                             | 87                           |
| Seattle Mariners      | 2.927                                  | 55.305                             | 5                            |
| Oakland Athletics     | 2.519                                  | 38.702                             | 33                           |
| Montreal Expos        | 2.644                                  | 52.027                             | 23                           |
| Los Angeles Dodgers   | 1.232                                  | 20.063                             | 33                           |