Week15 PTSE

May 10, 2021

```
[1]:
     import pandas as pd
[2]: df = pd.read_excel("/Users/thomasoakley/Week_15_data_PTSE.xlsx", sheet_name =__
      →"Removed Top 50")
[3]: df.head()
[3]:
          last_name first_name player_id year
                                                                   woba xwoba
                                                            xslg
                                                      xba
     0
            Greinke
                            Zack
                                     425844
                                            2020 0.249
                                                           0.421
                                                                  0.293
                                                                         0.299
            Greinke
                            Zack
                                     425844
                                             2018
                                                    0.245
                                                           0.405
                                                                  0.286
                                                                         0.302
     1
        Foltynewicz
                           Mike
                                     592314
                                             2018
                                                   0.202
                                                           0.330
                                                                  0.266
                                                                         0.275
     3
            Greinke
                                     425844
                                             2019
                                                    0.238
                                                           0.388
                                                                  0.263
                            Zack
                                                                         0.281
           Carrasco
                          Carlos
                                     471911
                                             2018 0.222 0.360
                                                                  0.288 0.277
                      exit_velocity_avg
                                          launch_angle_avg
                                                             sweet_spot_percent
         xobp
                xiso
     0 0.276
               0.172
                                    86.8
                                                       11.7
                                                                            34.7
     1 0.290 0.160
                                                       10.4
                                                                            35.4
                                    88.0
     2 0.282 0.128
                                                       13.9
                                                                            30.8
                                    88.6
     3 0.270 0.150
                                    87.5
                                                       11.0
                                                                            34.1
     4 0.271 0.138
                                    89.7
                                                        9.8
                                                                            32.9
        barrel_batted_rate groundballs_percent
                                                  flyballs_percent
     0
                       8.2
                                            42.9
                                                               18.9
     1
                       6.4
                                            45.5
                                                               23.7
     2
                       6.9
                                            43.7
                                                               24.0
                                            46.3
     3
                       6.3
                                                               20.7
     4
                       6.0
                                            48.0
                                                               24.2
        fastball_avg_spin
                            breaking_avg_spin offspeed_avg_spin
     0
                     2329
                                         2425
                                                            1679
     1
                     2329
                                                            1738
                                         2514
     2
                     2320
                                         2513
                                                            1909
     3
                     2318
                                         2481
                                                            1779
     4
                     2309
                                                            1507
                                         2680
[6]: df.sample(7)
```

```
[6]:
          last_name first_name player_id year
                                                      xba
                                                            xslg
                                                                   woba xwoba \
    35
          Wainwright
                            Adam
                                     425794 2019
                                                   0.258
                                                          0.418 0.330
                                                                         0.321
    97
               Junis
                           Jakob
                                      596001 2019 0.270
                                                           0.478 0.340
                                                                         0.344
     103
          Hendricks
                            Kyle
                                      543294 2019 0.245
                                                           0.388 0.290
                                                                         0.291
            Odorizzi
                            Jake
                                      543606 2018 0.237
                                                           0.412 0.322
                                                                         0.323
    27
    65
            Castillo
                            Luis
                                      622491 2020
                                                   0.209
                                                           0.313 0.290
                                                                         0.266
    107
            Anderson
                           Brett
                                      474463 2019
                                                   0.282
                                                           0.476
                                                                  0.308
                                                                         0.345
                                      502043 2018 0.249
    75
              Gibson
                            Kyle
                                                           0.388
                                                                  0.306
                                                                         0.316
          xobp
                  xiso
                        exit_velocity_avg
                                           launch_angle_avg sweet_spot_percent
         0.330
    35
                 0.160
                                      88.9
                                                        10.2
                                                                             32.1
    97
          0.334
                 0.208
                                      90.1
                                                        12.7
                                                                             35.4
     103 0.287
                                      86.5
                                                        14.2
                                                                             33.6
                0.143
     27
         0.323 0.175
                                      89.1
                                                        21.4
                                                                             35.2
         0.277 0.104
     65
                                      86.0
                                                         2.2
                                                                             28.7
     107 0.334 0.195
                                      89.6
                                                         5.0
                                                                             30.5
    75
         0.324 0.140
                                      88.0
                                                         7.9
                                                                             30.9
          barrel_batted_rate groundballs_percent flyballs_percent
    35
                         6.5
                                              49.4
                                                                20.0
    97
                         8.6
                                                                26.4
                                              43.2
    103
                         5.4
                                              43.7
                                                                22.7
    27
                         7.4
                                              30.6
                                                                29.7
                         4.5
    65
                                              58.4
                                                                14.6
     107
                         7.3
                                              55.5
                                                                16.3
    75
                         5.7
                                              51.4
                                                                17.9
                             breaking_avg_spin offspeed_avg_spin
          fastball_avg_spin
    35
                       2238
                                           2752
                                                             1769
    97
                       2026
                                           2490
                                                             1336
     103
                       1987
                                           2784
                                                             2115
    27
                       2253
                                           2219
                                                             1605
    65
                       2153
                                           2489
                                                             1949
     107
                       1867
                                           2386
                                                             1481
     75
                       2140
                                           2472
                                                             1696
[]:
```