Untitled

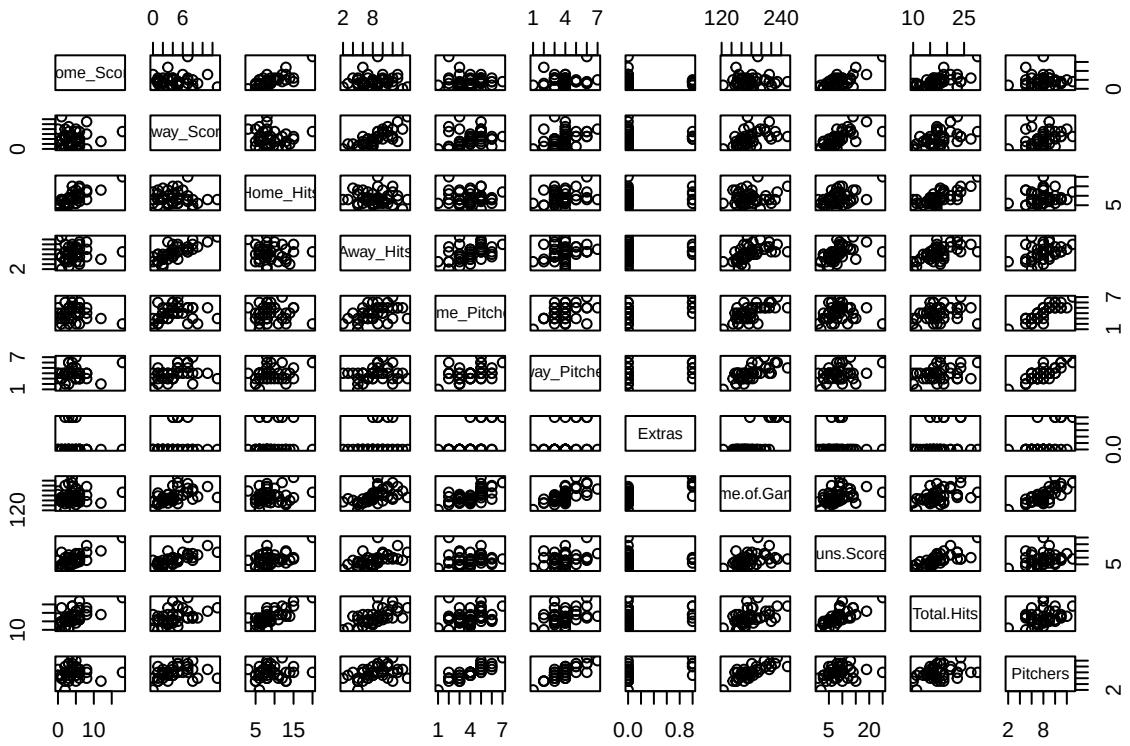
2024-12-01

1.) (IN R) We have seen the excel file before called Game_Times which shows many variables associated with 3 days of baseball games in the 2015 season. One reason people think baseball TV ratings are down is because the games last too long. Suppose we want to find out which variable has the strongest association with Time of Game to try to make games shorter.

```
setwd("~/Desktop/Personal_save/Stat_405_Module_14/Lab_14.2")
times <- read.csv(file="Game_Times.csv",header=TRUE)
```

a. Examine the dataset graphically and draw conclusions.

```
pairs(times[,4:14])
```



You have to open it in another the plot in another window but you can see that Time of game and Pitches appears to have the strongest cooralation.

b. Examine the dataset numerically and draw conclusions.

```
cor(times[,4:14])
```

```
##                Home_Score  Away_Score   Home_Hits   Away_Hits Home_Pitchers
## Home_Score     1.00000000  0.06812434  0.75320467  0.02263043   -0.06604501
## Away_Score     0.06812434  1.00000000 -0.07679158  0.77734199    0.24809201
## Home_Hits      0.75320467 -0.07679158  1.00000000 -0.07767808   -0.03759859
## Away_Hits      0.02263043  0.77734199 -0.07767808  1.00000000    0.44334814
## Home_Pitchers -0.06604501  0.24809201 -0.03759859  0.44334814    1.00000000
```

```
## Away_Pitchers  0.15417821  0.30186344  0.23426234  0.19943219    0.41879991
## Extras        -0.07456145  0.10820777  0.13680026  0.17017594    0.46134351
## Time.of.Game   0.06593952  0.49990793  0.15004094  0.54228053    0.64324584
## Runs.Scored    0.76024978  0.69991319  0.48921013  0.52236217    0.11426249
## Total.Hits     0.60627799  0.47162560  0.73122658  0.62327331    0.27384832
## Pitchers       0.04566655  0.32468700  0.10850738  0.38871871    0.85930118
##               Away_Pitchers      Extras Time.of.Game Runs.Scored Total.Hits
## Home_Score        0.1541782 -0.07456145   0.06593952  0.76024978  0.6062780
## Away_Score        0.3018634  0.10820777   0.49990793  0.69991319  0.4716256
## Home_Hits         0.2342623  0.13680026   0.15004094  0.48921013  0.7312266
## Away_Hits         0.1994322  0.17017594   0.54228053  0.52236217  0.6232733
## Home_Pitchers     0.4187999  0.46134351   0.64324584  0.11426249  0.2738483
## Away_Pitchers     1.0000000  0.32420830   0.67082734  0.30693125  0.3202012
## Extras            0.3242083  1.00000000   0.66221490  0.01708092  0.2237373
## Time.of.Game      0.6708273  0.66221490   1.00000000  0.37271735  0.4887176
## Runs.Scored       0.3069312  0.01708092   0.37271735  1.00000000  0.7411250
## Total.Hits        0.3202012  0.22373729   0.48871763  0.74112498  1.0000000
## Pitchers          0.8243301  0.47021670   0.77884841  0.24411013  0.3510725
##                  Pitchers
## Home_Score    0.04566655
## Away_Score    0.32468700
## Home_Hits     0.10850738
## Away_Hits     0.38871871
## Home_Pitchers 0.85930118
## Away_Pitchers 0.82433012
## Extras        0.47021670
## Time.of.Game  0.77884841
## Runs.Scored   0.24411013
## Total.Hits    0.35107248
## Pitchers      1.00000000
```

If you examine the Time.of.Game column you can see that the greatest coloration coefficient is with Pitchers.