USJudges_RMarkdown

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Aim

The aim of this document is to develop a weighted index of Judge's performance based on R's **"USJudgeRatings"** database. The dataset contains lawyers' ratings of State Judges in the US Superior Court. Additional information on the dataset can be found here: https://stat.ethz.ch/R-manual/R-devel/library/datasets/html/USJudgeRatings.html

Data on four variables will be used:

variable	abbreviation
Judicial integrity	INTG
Preparation for trial	PREP
Sound oral rulings	ORAL
Physical ability	PHYS

Setting working directory

```
setwd("C:/Users/Fabian/Documents/GitHub/repo1/analysis/USJudges")

list.files()
```

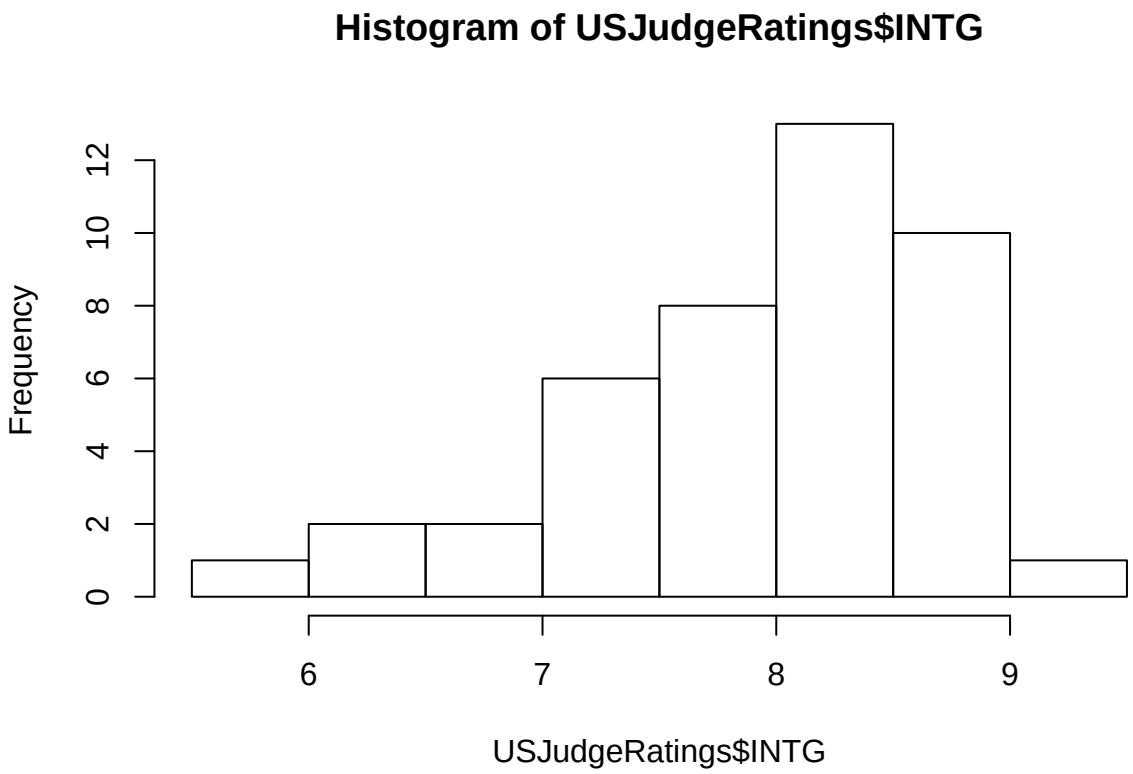
```
## [1] "R_files"                  "test_files"
## [3] "USJudges_RMarkdown.html" "USJudges_RMarkdown.Rmd"
```

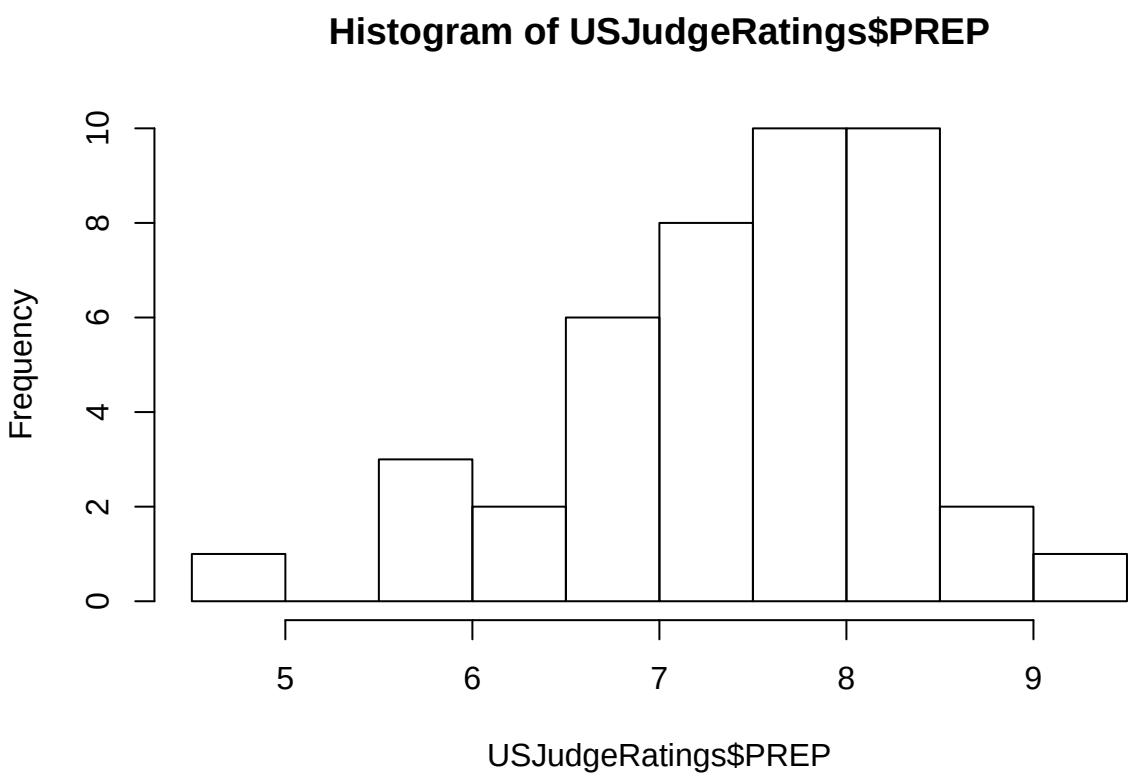
Descriptive Statistics

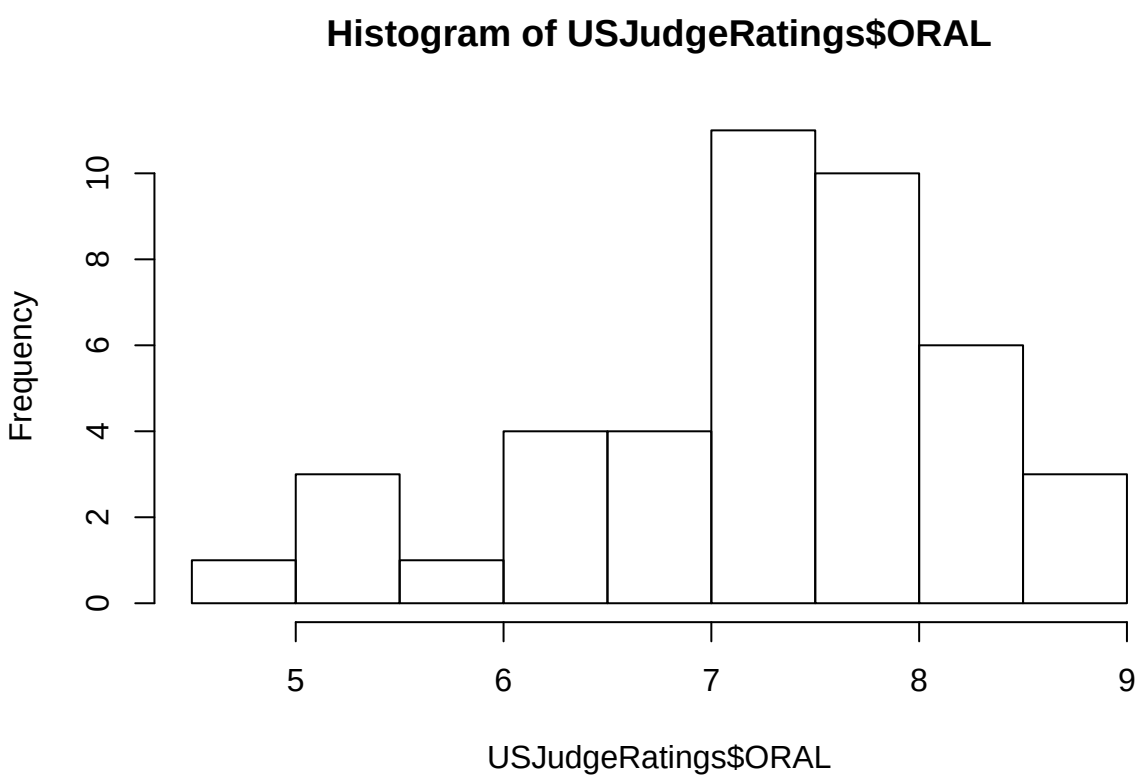
Overview

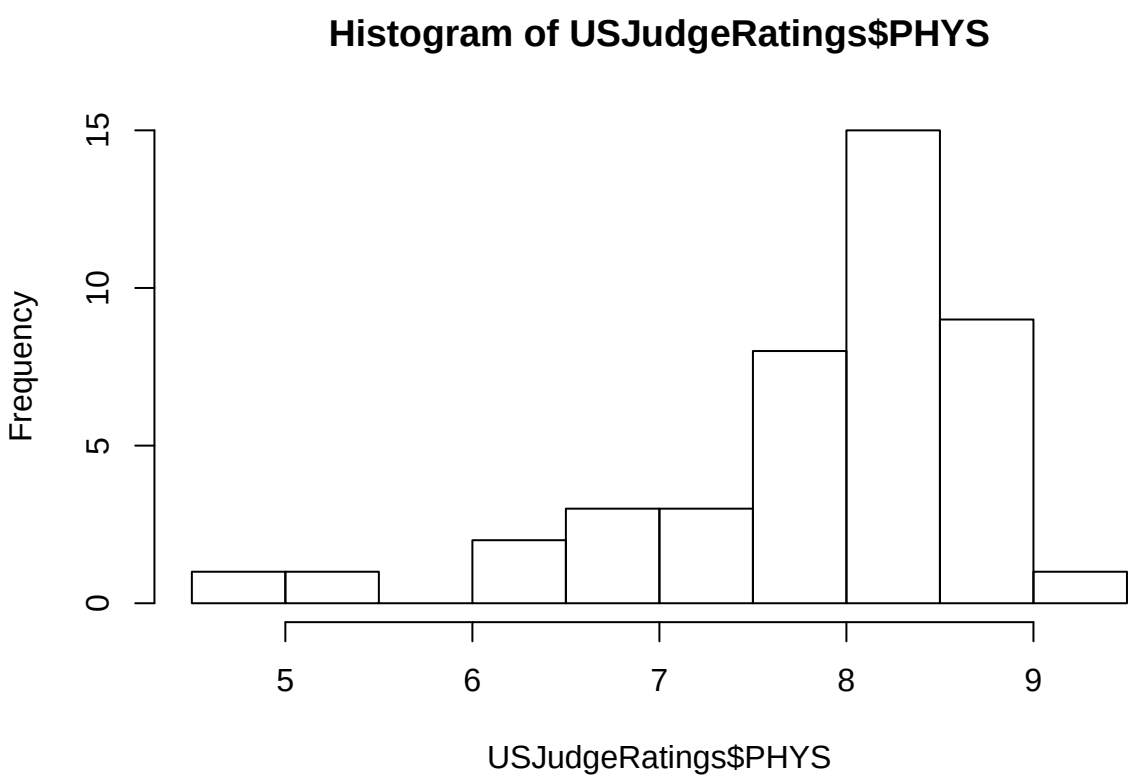
variable	abbreviation	range	mean	median	standard deviation
Judicial integrity	INTG	5.9, 9.2	8.0209302	8.1	0.7701447
Preparation for trial	PREP	4.8, 9.1	7.4674419	7.7	0.9533702
Sound oral rulings	ORAL	4.7, 8.9	7.2930233	7.5	1.0100437
Physical ability	PHYS	4.7, 9.1	7.9348837	8.1	0.9395753

Histograms


Histogram of USJudgeRatings$INTG
Frequency
0
2
4
6
8
10
12
6
7
8
9
USJudgeRatings$INTG


Histogram of USJudgeRatings$PREP
Frequency
0
2
4
6
8
10
5
6
7
8
9
USJudgeRatings$PREP


Histogram of USJudgeRatings$ORAL
Frequency
0
2
4
6
8
10
5
6
7
8
9
USJudgeRatings$ORAL



Creating a weighted index

Defining weights for the Index

```
w1 <- 0.25
w2 <- 0.25
w3 <- 0.25
w4 <- 0.25
```

Creating function for weighted Index

- r identifies the row/Judge in the dataframe
- x1 = INTG, x2 = PREP, x3 = ORAL, x4 = PHYS
- w1 = weight for x1, ...

```
weighted_index <- function(r){
  x1[r]*w1+x2[r]*w2+x3[r]*w3+x4[r]*w4
}
```

Results for index

```r
weighted_index(1:43) #for all Judges
```

```
##  [1] 7.600 8.300 7.700 8.675 5.675 8.375 8.800 5.550 8.625 8.000 7.650
## [12] 7.200 7.750 6.650 8.050 7.600 6.925 7.500 7.850 6.525 7.300 6.850
## [23] 5.775 7.650 8.575 8.900 8.100 8.625 8.175 9.025 7.925 7.775 8.425
## [34] 8.650 5.850 8.100 7.975 7.975 7.175 7.875 7.000 8.125 7.375
```

#The average rating for Judge `r row.names(USJudgeRatings[1,]` is `r weighted_index(1)`.

using the Index for Judge in row 1

weighted_index(1)
