Universidad Autónoma de Nuevo León

Facultad de Ciencias Forestales

Análisis Estadístico

Profesor: Dr. Marco A. González Tagle

Laboratorio 6

Jorge Alexis Luna Robles

Matricula: 2134500

Primer semestre 21/septiembre/2022

Laboratorio06_JorgeLuna.R

Alexis Luna

2022-09-21

```
# Jorge Alexis Luna RObles
# Laboratorio 6

wins = c(52, 51, 47, 47, 42)
losses = c(20, 21, 25, 25, 30)

#Porcentaje de victorias-derrotas
win_loss_perc = wins/(wins + losses)
win_loss_perc
```

```
## [1] 0.7222222 0.7083333 0.6527778 0.6527778 0.5833333
```

```
teams = c("UtJ", "PhS", "DnN", "LAC", "DIM")

# MANIPULACIÓN DE VECTORES ------------------------------------------
--

# PRIMER ELEMENTO DE "WINS"
wins[1]
```

```
## [1] 52
```

```
# SEGUNDO ELEMENTO DE "LOSSES"
losses[3]
```

```
## [1] 25
```

```
# ULTIMO NOMBRE EN "TEAMS"
teams[5]
```

```
## [1] "DIM"
```

```
length(teams)
```

```
## [1] 5
```

```
teams[length(teams)]
```

```
## [1] "DIM"
```

```
sort(wins, decreasing = TRUE)
```

```
## [1] 52 51 47 47 42
```

```
rev(wins)
```

```
## [1] 42 47 47 51 52
```

```r
# Subconjuntos con índices lógicos ------------------------------------
--

# victorias de Utah Jazz
wins[teams == 'UtJ']
```

```
## [1] 52
```

```r
# equipos con victorias > 40
teams[wins > 40]
```

```
## [1] "UtJ" "PhS" "DnN" "LAC" "DIM"
```

```r
# nombre de los equipos con derrotas entre 10 y 29
teams[losses >= 10 & losses <= 29]
```

```
## [1] "UtJ" "PhS" "DnN" "LAC"
```

```r
# Factores y variables cualitativas -----------------------------------
--

# Vector Númerico
num_vector <- c(1, 2, 3, 1, 2, 3, 2)
# crear un factor a partir de num_vector
first_factor <- factor(num_vector)
first_factor
```

```
## [1] 1 2 3 1 2 3 2
## Levels: 1 2 3
```

```r
teams = factor(teams)
teams
```

```
## [1] UtJ PhS DnN LAC DIM
## Levels: DIM DnN LAC PhS UtJ
```

```r
# Secuencias ----------------------------------------------------------
--

# operador dos puntos :
1:5
```

```
## [1] 1 2 3 4 5
```

```r
1:10
```

```
##  [1]  1  2  3  4  5  6  7  8  9 10
```

```r
-3:7
```

```
##  [1] -3 -2 -1  0  1  2  3  4  5  6  7
```

```r
10:1
```

```
##  [1] 10  9  8  7  6  5  4  3  2  1

# Función Sequencia
seq(from = 1, to = 10)

##  [1]  1  2  3  4  5  6  7  8  9 10

seq(from = 1, to = 10, by = 1)

##  [1]  1  2  3  4  5  6  7  8  9 10

seq(from = 1, to = 10, by = 2)

## [1] 1 3 5 7 9

seq(from = -5, to = 5, by = 1)

##  [1] -5 -4 -3 -2 -1  0  1  2  3  4  5

# Vectores repetidos ------------------------------------------------
--

rep(1, times = 5)

## [1] 1 1 1 1 1

rep(c(1, 2), times = 3)

## [1] 1 2 1 2 1 2

rep(c(1, 2), each = 2)

## [1] 1 1 2 2

rep(c(1, 2), length.out = 5)

## [1] 1 2 1 2 1

rep(c(3, 2, 1), times = 3, each = 2)

##  [1] 3 3 2 2 1 1 3 3 2 2 1 1 3 3 2 2 1 1

# De vectores a estructura tabular (data frame) ------------------------
--

dat=data.frame(
  Teams = teams,
  Wins = wins,
  Losses = losses,
  WLperc = win_loss_perc)
dat

##   Teams Wins Losses    WLperc
## 1   UtJ   52     20 0.7222222
```

```
## 2   PhS   51     21 0.7083333
## 3   DnN   47     25 0.6527778
## 4   LAC   47     25 0.6527778
## 5   DIM   42     30 0.5833333
```

```
dat$Teams
```

```
## [1] UtJ PhS DnN LAC DIM
## Levels: DIM DnN LAC PhS UtJ
```

```
dat$Wins[1]
```

```
## [1] 52
```

```
dat$Wins[5]
```

```
## [1] 42
```

```
#Victorias del equipo Utah
dat$Wins[dat$Teams == "UtJ"]
```

```
## [1] 52
```

```
# Equipos con vistorias >40
dat$Teams[dat$Wins >40]
```

```
## [1] UtJ PhS DnN LAC DIM
## Levels: DIM DnN LAC PhS UtJ
```

```
#Nombre de los equipos con derrotas entre 10 y 29
dat$Teams[dat$Losses >= 10 & dat$Losses <= 29]
```

```
## [1] UtJ PhS DnN LAC
## Levels: DIM DnN LAC PhS UtJ
```

```
# EJERCICIO ----------------------------------------------------------
--
```

```
teams_2 = c("UJ", "PS", "DN", "LAC", "DM", "PTB", "LAL", "MG",
            "GSW", "SAS", "NOP", "SK", "MT", "OCT", "HOR")
wins_2 = c(52, 51, 47, 47, 42, 42, 42, 38, 39, 33, 31, 31, 23, 22, 17)
losses_2 = c(20, 21, 25, 25, 30, 30, 30, 34, 33, 39, 41, 41, 49, 50, 55)
win_loss_perc_2 = c(.722, .708, .653, .653, .583, .583, .583, .528, .542,
.458, .431, .431, .319, .306, .236)
games_behind = c("NaN", 1.0, 5.0, 5.0, 10.0, 10.0, 10.0, 14.0, 13.0, 19.0
, 21.0, 21.0, 29.0, 30.0, 35.0)
points_scored = c(116.4, 115.3, 115.1, 114.0, 112.4, 116.1, 109.5, 113.3,
113.7, 111.1, 114.6, 113.7, 112.1, 105.0, 108.8)
points_against = c(107.2, 109.5, 110.1, 107.8, 110.2, 114.3, 106.8, 112.3
, 112.7, 112.8, 114.9, 117.4, 117.7, 115.6, 116.7)
rating = c(8.97, 5.67, 4.82, 6.02, 2.26, 1.81, 2.77, 1.07, 1.10, -1.58, -
0.20, -3.45, -5.25, -10.13, -7.50)
```

```r
games_behind_2 = wins_2[1]-wins_2

dat_2 = data.frame(
  TeamsWesC = teams_2,
  W = wins_2,
  L = losses_2,
  W_L = win_loss_perc_2,
  GB = games_behind_2,
  PS_G = points_scored,
  PA_G = points_against,
  SRS = rating
)

sort(points_scored, decreasing = TRUE)
```

```
##  [1] 116.4 116.1 115.3 115.1 114.6 114.0 113.7 113.7 113.3 112.4 112.1
111.1
## [13] 109.5 108.8 105.0
```

```r
sort(points_scored, decreasing = FALSE)
```

```
##  [1] 105.0 108.8 109.5 111.1 112.1 112.4 113.3 113.7 113.7 114.0 114.6
115.1
## [13] 115.3 116.1 116.4
```