Tarea-6.R

User

2021-09-03

```r
# Itzel Reta Heredia
# 8/31/2021
# 2124992
############
#Tarea 6
setwd("C:/estadistica/Analisis-estadisticos-2021")

erp <- read.csv("erupciones.csv", header = TRUE)

mean(erp$eruptions)
```

```
## [1] 3.487783
```

```r
mean(erp$waiting)
```

```
## [1] 70.89706
```

```r
sd(erp$eruptions)
```

```
## [1] 1.141371
```

```r
sd(erp$waiting)
```

```
## [1] 13.59497
```

```r
var(erp$eruptions)
```

```
## [1] 1.302728
```

```r
var(erp$waiting)
```

```
## [1] 184.8233
```

```r
cor.test(erp$eruptions, erp$waiting)
```

```
##
##  Pearson's product-moment correlation
##
## data:  erp$eruptions and erp$waiting
## t = 34.089, df = 270, p-value < 2.2e-16
## alternative hypothesis: true correlation is not equal to 0
## 95 percent confidence interval:
##  0.8756964 0.9210652
## sample estimates:
##       cor
## 0.9008112
```

```
# r= 0.9008112
# R: H1 si es alternativa si es sifnificativa

# H1: "Existe una correlacion positiva entre la duracion de las erupciones y el tiempo de espera"
# H0: No existe una correlación entre e la duración de las erupciones y el tiempo de espera


erp$xmn <- (erp$waiting - mean(erp$waiting))

erp$ymn <- (erp$eruptions - mean(erp$eruptions))

erp$xmn2 <- (erp$waiting - mean(erp$waiting))^2

beta <- sum(erp$xmn * erp$ymn)/sum(erp$xmn2)
beta
```

```
## [1] 0.07562795
```

```
alfa <- (mean(erp$eruptions))-(beta*mean(erp$waiting))
alfa
```

```
## [1] -1.874016
```

```
erp$yep <- alfa + (beta*erp$waiting)

erp.lm <- lm(erp$eruptions ~ erp$waiting)
erp.lm$fitted.values
```

```
##        1        2        3        4        5        6        7        8
## 4.100592 2.209893 3.722452 2.814917 4.554360 2.285521 4.781243 4.554360
##        9       10       11       12       13       14       15       16
## 1.983009 4.554360 2.209893 4.478732 4.024964 1.680498 4.403104 2.058637
##       17       18       19       20       21       22       23       24
## 2.814917 4.478732 2.058637 4.100592 1.983009 1.680498 4.024964 3.344312
##       25       26       27       28       29       30       31       32
## 3.722452 4.403104 2.285521 3.873708 4.024964 4.100592 3.646824 3.949336
##       33       34       35       36       37       38       39       40
## 3.117429 4.176220 3.722452 2.058637 1.756126 4.176220 2.588033 4.932499
##       41       42       43       44       45       46       47       48
## 4.176220 2.512405 4.478732 2.512405 3.646824 4.403104 2.966173 2.134265
##       49       50       51       52       53       54       55       56
## 4.327476 2.588033 3.798080 4.932499 2.209893 4.176220 2.209893 4.403104
##       57       58       59       60       61       62       63       64
## 3.495568 2.966173 3.949336 4.251848 2.588033 4.478732 1.756126 4.327476
##       65       66       67       68       69       70       71       72
## 2.663661 5.083755 4.024964 4.024964 3.041801 3.646824 4.327476 2.361149
##       73       74       75       76       77       78       79       80
## 4.100592 3.495568 2.814917 3.873708 2.663661 4.024964 3.873708 4.403104
##       81       82       83       84       85       86       87       88
## 3.798080 4.327476 3.419940 3.041801 3.646824 4.781243 3.873708 4.176220
##       89       90       91       92       93       94       95       96
## 1.756126 4.629988 2.663661 4.932499 1.907381 4.024964 2.890545 3.571196
##       97       98       99      100      101      102      103      104
## 4.478732 3.798080 1.983009 4.327476 2.814917 4.781243 1.831753 4.403104
##      105      106      107      108      109      110      111      112
## 4.251848 1.680498 4.478732 2.058637 4.629988 4.251848 3.798080 2.588033
```

```
##      113      114      115      116      117      118      119      120
## 4.856871 4.100592 2.588033 4.251848 1.907381 4.554360 2.588033 4.705615
##      121      122      123      124      125      126      127      128
## 2.134265 3.344312 3.949336 2.361149 4.781243 4.251848 1.529242 4.327476
##      129      130      131      132      133      134      135      136
## 2.285521 4.932499 1.529242 4.403104 2.361149 4.856871 1.604870 4.327476
##      137      138      139      140      141      142      143      144
## 1.983009 4.629988 2.134265 4.100592 4.251848 2.663661 4.327476 3.949336
##      145      146      147      148      149      150      151      152
## 3.873708 2.588033 4.176220 1.831753 5.386267 2.134265 3.949336 3.949336
##      153      154      155      156      157      158      159      160
## 3.041801 4.251848 3.495568 3.419940 4.251848 5.159383 2.134265 4.856871
##      161      162      163      164      165      166      167      168
## 1.529242 4.629988 2.512405 4.024964 3.117429 3.873708 2.890545 4.781243
##      169      170      171      172      173      174      175      176
## 2.058637 5.159383 1.831753 2.436777 3.949336 3.268684 4.251848 4.251848
##      177      178      179      180      181      182      183      184
## 3.646824 1.907381 4.554360 3.722452 2.285521 3.949336 4.403104 4.403104
##      185      186      187      188      189      190      191      192
## 1.983009 4.024964 4.478732 1.604870 4.403104 2.285521 4.251848 2.436777
##      193      194      195      196      197      198      199      200
## 3.873708 4.478732 3.949336 4.251848 4.705615 3.949336 1.983009 4.024964
##      201      202      203      204      205      206      207      208
## 2.663661 4.327476 5.008127 2.134265 4.024964 1.604870 3.949336 4.478732
##      209      210      211      212      213      214      215      216
## 1.831753 4.403104 3.495568 4.176220 1.831753 3.798080 2.966173 3.873708
##      217      218      219      220      221      222      223      224
## 2.134265 5.235011 2.285521 3.873708 1.907381 4.327476 2.209893 3.798080
##      225      226      227      228      229      230      231      232
## 4.024964 4.100592 4.024964 4.024964 3.419940 4.100592 3.419940 2.209893
##      233      234      235      236      237      238      239      240
## 4.629988 1.907381 4.932499 2.209893 2.209893 3.949336 4.100592 2.966173
##      241      242      243      244      245      246      247      248
## 3.798080 1.680498 4.629988 2.890545 4.554360 4.327476 2.436777 4.327476
##      249      250      251      252      253      254      255      256
## 3.193057 3.722452 2.209893 4.403104 3.646824 3.646824 4.781243 4.176220
##      257      258      259      260      261      262      263      264
## 3.495568 4.403104 2.361149 4.100592 4.024964 4.478732 2.512405 4.403104
##      265      266      267      268      269      270      271      272
## 1.377986 2.663661 3.798080 4.251848 1.604870 4.932499 1.604870 3.722452
```