Examen_Regresion_Geiser.R

Usuario

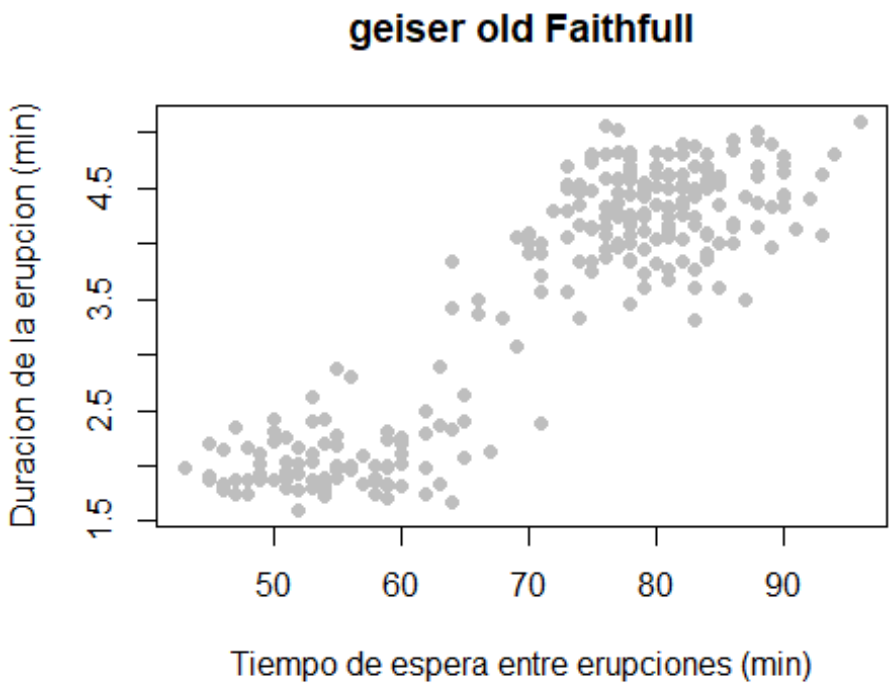
2022-05-11

```
 # Clase Semana 15 dia 1
 # Examen de regresion integral
 # Alejandro Zapata

geiser <- read.csv("erupciones.csv", header = T)

 # Revisar datos

plot(geiser$waiting, geiser$eruptions, pch=19,
     xlab = "Tiempo de espera entre erupciones (min)",
     ylab = "Duracion de la erupcion (min)",
     col="gray",
     main="geiser old Faithfull")
```




```
cor.test(geiser$waiting, geiser$eruptions)

##
##  Pearson's product-moment correlation
##
```

```
## data:  geiser$waiting and geiser$eruptions
## 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

mean(geiser$eruptions)

## [1] 3.487783

sd(geiser$eruptions)

## [1] 1.141371

var(geiser$eruptions)

## [1] 1.302728

mean(geiser$waiting)

## [1] 70.89706

sd(geiser$waiting)

## [1] 13.59497

var(geiser$waiting)

## [1] 184.8233

geiser.lm <- lm(geiser$eruptions ~ geiser$waiting)
summary(geiser.lm)

##
## Call:
## lm(formula = geiser$eruptions ~ geiser$waiting)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.29917 -0.37689  0.03508  0.34909  1.19329
##
## Coefficients:
##                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)    -1.874016   0.160143  -11.70   <2e-16 ***
## geiser$waiting  0.075628   0.002219   34.09   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4965 on 270 degrees of freedom
```

```
## Multiple R-squared:  0.8115, Adjusted R-squared:  0.8108
## F-statistic:  1162 on 1 and 270 DF,  p-value: < 2.2e-16
```

```
lm(formula = geiser$eruptions ~ geiser$waiting)
```

```
##
## Call:
## lm(formula = geiser$eruptions ~ geiser$waiting)
##
## Coefficients:
##    (Intercept)  geiser$waiting
##       -1.87402         0.07563
```

```
# Valor de y prima para los valores de x dados
valores <- c(80, 40, 45, 53, 61)
```

```
-1.874016 + 0.075628 *valores
```

```
## [1] 4.176224 1.151104 1.529244 2.134268 2.739292
```