semana-16.R

Usuario

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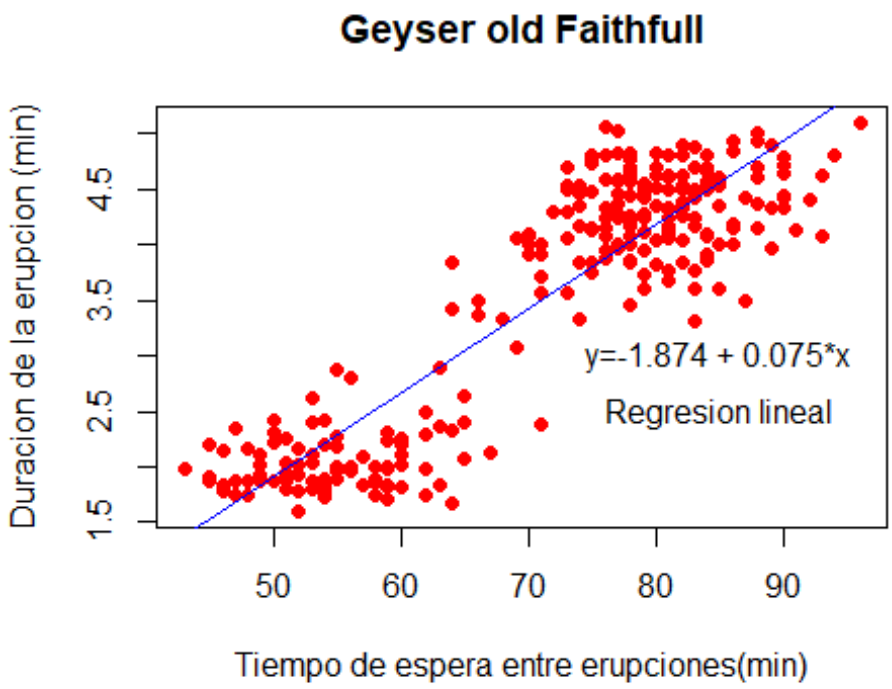
```
#MZZ
#Semana 16
#Examen


geiser <- read.csv("Clases/erupciones.csv")

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

#Errupcion
mean(geiser$eruptions)

## [1] 3.487783

sd (geiser$eruptions)

## [1] 1.141371

var(geiser$eruptions)

## [1] 1.302728

#Waiting
mean(geiser$waiting)

## [1] 70.89706

sd(geiser$waiting)

## [1] 13.59497

var(geiser$waiting)

## [1] 184.8233

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

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

##
## 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

geiser$yprima <- round(-1.874016 + 0.075628* geiser$waiting,2)
plot(geiser$waiting, geiser$eruptions, pch=19, xlab = "Tiempo de espera
entre erupciones(min)", ylab = "Duracion de la erupcion (min)", col=
"Red", main= "Geyser old Faithfull")
abline(Geyser, col= "blue")
text(85, 3, "y=-1.874 + 0.075*x")
text(85, 2.5, "Regresion lineal")
```




```
Geyser$coefficients

##    (Intercept) geiser$waiting
##    -1.87401599     0.07562795

sum(Geyser$residuals)

## [1] 6.973588e-16

valor <- c(80, 40, 45, 53, 61)
-1.874016 + 0.075628* valor

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