

CargarDatos

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Carga de datos

```
Datos <- read.table(  
  "UScrime.txt",  
  header = TRUE,  
  dec = ",",  
)
```

Primera idea: Incluir todas las variables :

```
lm(  
  y ~ . ,  
  data = Datos  
) %>% summary()
```

```
##  
## Call:  
## lm(formula = y ~ ., data = Datos)  
##  
## Residuals:  
##      Min       1Q   Median       3Q      Max   
## -395.74  -98.09   -6.69  112.99  512.67   
##  
## Coefficients:  
##              Estimate Std. Error t value Pr(>|t|)      
## (Intercept) -5984.2876  1628.3184  -3.675  0.000893 ***  
## M              8.7830    4.1714   2.106  0.043443 *    
## So            -3.8035   148.7551  -0.026  0.979765      
## Ed             18.8324    6.2088   3.033  0.004861 **   
## Po1            19.2804   10.6110   1.817  0.078892 .     
## Po2           -10.9422   11.7478  -0.931  0.358830      
## LF            -0.6638    1.4697  -0.452  0.654654      
## M.F             1.7407    2.0354   0.855  0.398995      
## Pop            -0.7330    1.2896  -0.568  0.573845      
## NW              0.4204    0.6481   0.649  0.521279      
## U1             -5.8271    4.2103  -1.384  0.176238      
## U2             16.7800    8.2336   2.038  0.050161 .     
## GDP             0.9617    1.0367   0.928  0.360754      
## Ineq           7.0672    2.2717   3.111  0.003983 **   
## Prob          -4855.2658 2272.3746  -2.137  0.040627 *    
## Time          -3.4790    7.1653  -0.486  0.630708
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 209.1 on 31 degrees of freedom
## Multiple R-squared:  0.8031, Adjusted R-squared:  0.7078
## F-statistic: 8.429 on 15 and 31 DF,  p-value: 3.539e-07
```

En este caso se puede ver que pocas variables son significativas, pero el modelo en general si lo es ...

Pasos siguientes :

- Hay que empezar el proceso de ... (Backward/Forward/Stepwise)
- Diagnostico ...

```
qplot(x=Var1,
      y=Var2,
      data = melt(cor(Datos, use = "p")),
      fill = value,
      geom="tile"
)+scale_fill_gradient2(limits = c(-1, 1),
                       low = "#A50303", high = "#250455")+
  theme(aspect.ratio = 1,
        plot.title = element_text(
          face = "bold",
          color = "#280434FF"),
        plot.subtitle = element_text(
          size=8,
          color="#5C485F"
        ),
        axis.text.x = element_text(
          color = "#8C04C2"
        ),
        axis.text.y = element_text(
          color="#8C04C2"
        )
  )+
labs(title="Mapa de correlación de variables",
      subtitle = "Variables referidas a tasa de criminalidad en USA",
      x="Variables",
      y="",
      fill="Coef Corr.")
```

Mapa de correlación de variables

Variables referidas a tasa de criminalidad en USA

