

Actividad 1.2

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Leyendo los datos

```
M = read.csv("mc-donalds-menu.csv")
names(M)
```

```
## [1] "Category"           "Item"
## [3] "Serving.Size"       "Calories"
## [5] "Calories.from.Fat"  "Total.Fat"
## [7] "Total.Fat....Daily.Value." "Saturated.Fat"
## [9] "Saturated.Fat....Daily.Value." "Trans.Fat"
## [11] "Cholesterol"        "Cholesterol....Daily.Value."
## [13] "Sodium"             "Sodium....Daily.Value."
## [15] "Carbohydrates"      "Carbohydrates....Daily.Value."
## [17] "Dietary.Fiber"      "Dietary.Fiber....Daily.Value."
## [19] "Sugars"             "Protein"
## [21] "Vitamin.A....Daily.Value." "Vitamin.C....Daily.Value."
## [23] "Calcium....Daily.Value." "Iron....Daily.Value."
```

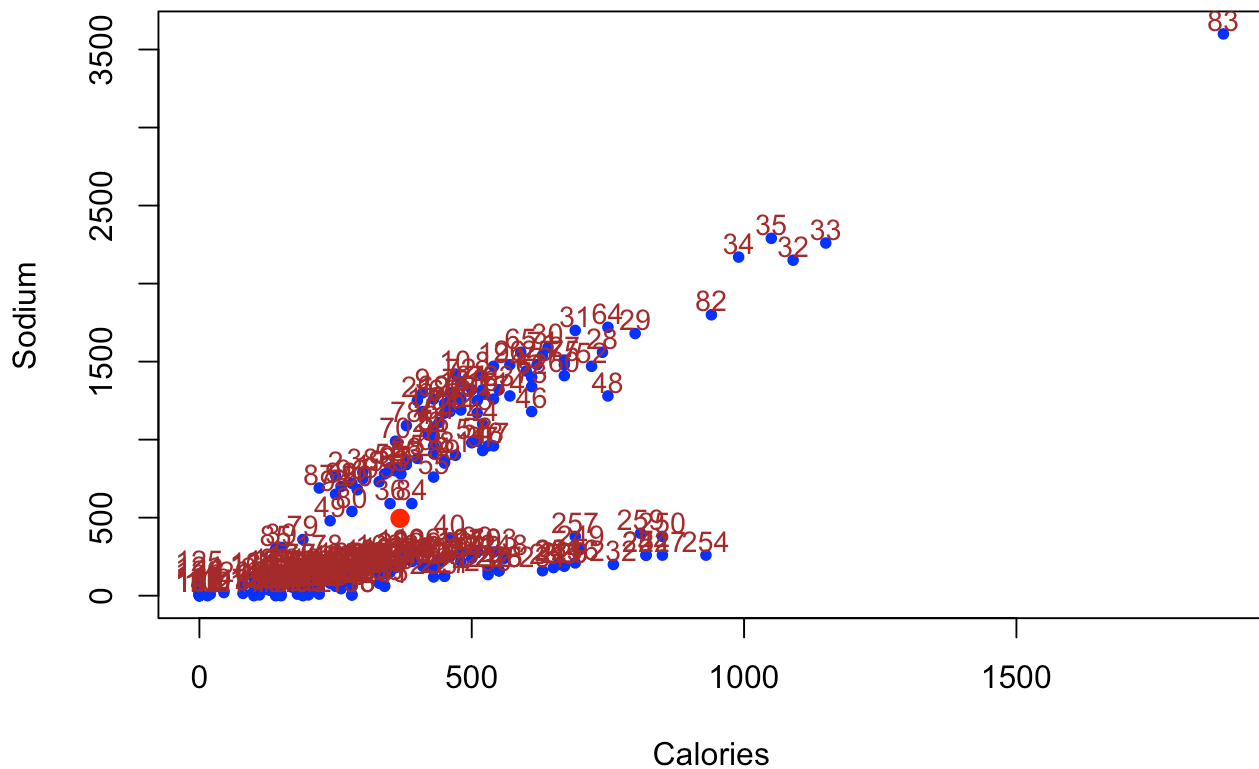
Reduciendo la matriz de datos a 5 variables numéricas

```
M1 = M[,c(4,11,13,19,20)]
x = data.frame(M1$Calories,M1$Sodium)
```

Plot de calorías con sodio

```
plot(M1$Calories,M1$Sodium,pch=20,col="blue",main = "Diagrama de dispersión Calories-
Sodium",ylab = "Sodium",xlab = "Calories")
points(mean(M1$Calories),mean((M1$Sodium)),pch=19,col="Red", cex = 1.2)
text(x[,1],x[,2],1:nrow(x),cex = 0.9, col = "brown", pos = 3,offset = 0.1)
```

Diagrama de dispersión Calories-Sodium



Vector de medias

```
m = apply(x, 2, mean)
m
```

```
## M1.Calories    M1.Sodium
##      368.2692     495.7500
```

```
covar = cov(x)
covar
```

```
##           M1.Calories M1.Sodium
## M1.Calories    57729.62  98755.94
## M1.Sodium      98755.94 332959.38
```

```
# Otro metodo
#m2 = c(mean(M1$Calories),mean(M1$Sodium))
#m2
#cov(M1$Calories,M1$Sodium)
```

Distancia de mahalanobis

G = mahalanobis(x,m,covar)

G

##	[1]	0.92006016	1.62698092	0.48245064	0.42281456	0.68125573	0.85023347
##	[7]	2.70052174	3.01198425	3.30466721	3.61074236	1.46281191	1.75949682
##	[13]	1.48469185	1.88074369	1.84112632	2.14181920	2.32011751	2.52455394
##	[19]	3.33395439	2.32110162	3.00459716	1.25777457	2.17887767	2.48741038
##	[25]	2.96632922	3.19558958	3.08960400	3.51226345	4.43983368	3.69430452
##	[31]	4.39973175	10.09649945	11.69707806	8.96950972	10.45534083	0.10181103
##	[37]	0.58484621	1.11078458	1.03990029	0.63290550	0.35453894	0.43616422
##	[43]	0.66762194	1.12315772	2.75997758	1.45905877	0.68804067	2.62915878
##	[49]	0.53791755	0.72319847	1.23910943	2.98922392	0.64312006	1.56219508
##	[55]	0.21946282	1.18623219	0.70926218	0.73450421	0.77630391	2.54322318
##	[61]	1.94492143	2.48039746	2.27003139	4.51360231	3.71191888	0.64681502
##	[67]	0.61925040	2.21880493	2.71090524	1.57699492	3.35604610	3.06129089
##	[73]	2.14332154	1.85708276	2.91288653	2.34289918	1.86036388	2.01240199
##	[79]	0.72505598	0.36738665	0.50241401	6.31097037	41.22387998	0.02804122
##	[85]	1.13381771	0.72461746	1.60384435	0.91480621	0.39605752	0.72319847
##	[91]	0.68832174	1.12781717	0.57303907	1.01744690	0.65868382	0.99346181
##	[97]	0.43297052	0.41775446	1.57271928	1.15618402	2.17482609	2.23365876
##	[103]	0.84196937	0.33518110	0.76628741	0.82622488	1.84660194	0.43841223
##	[109]	0.55304956	0.54631761	0.97014944	0.74145755	0.83871983	1.25491641
##	[115]	2.47610093	2.49429792	2.52387970	2.48504701	0.92473923	0.64696800
##	[121]	0.51159153	1.24693024	2.60357319	2.68377061	2.80777145	2.55620502
##	[127]	0.93713242	0.65225055	0.62931024	1.24749917	1.29403987	0.99679697
##	[133]	1.44038899	0.91653947	0.77242664	0.83871983	2.45912330	2.47610093
##	[139]	2.47610093	2.48504701	2.46745970	0.90222854	0.77733714	0.70927316
##	[145]	1.17003953	2.45912330	2.45912330	2.45912330	0.69148461	0.47795863
##	[151]	0.30044880	0.44295882	0.58992173	1.14840751	0.44295882	0.53911294
##	[157]	1.14840751	0.43616422	0.53911294	0.99396600	0.46820323	0.29163615
##	[163]	0.24612131	1.27928538	0.99679697	0.68428947	0.54889965	0.39532686
##	[169]	0.34345182	0.54889965	0.39532686	0.34345182	0.58551780	0.39830567
##	[175]	0.32208478	0.91480621	0.68428947	0.38083283	0.55304956	0.89732508
##	[181]	1.71171498	0.35967624	0.37737520	0.53131034	0.40089387	0.60518469
##	[187]	1.27581580	0.33518110	0.26989879	0.31896557	0.55577766	1.05710070
##	[193]	2.09366350	0.30044880	0.32908635	0.46199626	0.93269652	0.67134741
##	[199]	0.55642922	1.00063986	0.70725609	0.57062108	1.00063986	0.70725609
##	[205]	0.53318549	1.07357076	0.74385206	0.51999080	1.46317969	1.06988529
##	[211]	0.75148790	0.44815511	0.60880515	1.54522222	0.42461163	0.37976223
##	[217]	0.60518469	0.39055961	0.48296330	1.13430956	0.41782395	0.31879264
##	[223]	0.37718017	1.70498897	3.12132850	5.69561856	1.70498897	3.12132850
##	[229]	5.69561856	2.93021236	4.92909647	8.34583421	0.62985249	0.61690250
##	[235]	0.90532987	0.62062819	0.57450901	0.77343693	0.64257714	0.63293931
##	[241]	0.92879578	2.73971358	5.32563563	9.73573682	3.12132850	6.05528909
##	[247]	10.86797661	2.71424009	5.45770748	9.40500140	5.22933065	9.73573682
##	[253]	5.25439189	14.19672181	1.47862127	1.62798086	4.49828439	0.41775446
##	[259]	7.79946618	0.85194836				

```
plot(G,pch = 19, col="blue",cex = 0.7)
```

