

Clase_03.R

toryf

2023-04-19

```
#alumno:LUIs MIGUEL TORIBIO FERRER  
#FECHA:16/02/2022  
#PRINCIPIOS ESTADISTICOS
```

```
# cargar datos -----
```

```
Geiser <- read.csv("erupciones_1.csv", header=TRUE)
```

```
Geiser
```

##	eruptions	waiting
## 1	3.600	79
## 2	1.800	54
## 3	3.333	74
## 4	2.283	62
## 5	4.533	85
## 6	2.883	55
## 7	4.700	88
## 8	3.600	85
## 9	1.950	51
## 10	4.350	85
## 11	1.833	54
## 12	3.917	84
## 13	4.200	78
## 14	1.750	47
## 15	4.700	83
## 16	2.167	52
## 17	1.750	62
## 18	4.800	84
## 19	1.600	52
## 20	4.250	79
## 21	1.800	51
## 22	1.750	47
## 23	3.450	78
## 24	3.067	69
## 25	4.533	74
## 26	3.600	83
## 27	1.967	55
## 28	4.083	76
## 29	3.850	78
## 30	4.433	79
## 31	4.300	73
## 32	4.467	77
## 33	3.367	66
## 34	4.033	80
## 35	3.833	74
## 36	2.017	52
## 37	1.867	48
## 38	4.833	80
## 39	1.833	59
## 40	4.783	90
## 41	4.350	80
## 42	1.883	58
## 43	4.567	84
## 44	1.750	58
## 45	4.533	73
## 46	3.317	83
## 47	3.833	64
## 48	2.100	53
## 49	4.633	82
## 50	2.000	59
## 51	4.800	75

## 52	4.716	90
## 53	1.833	54
## 54	4.833	80
## 55	1.733	54
## 56	4.883	83
## 57	3.717	71
## 58	1.667	64
## 59	4.567	77
## 60	4.317	81
## 61	2.233	59
## 62	4.500	84
## 63	1.750	48
## 64	4.800	82
## 65	1.817	60
## 66	4.400	92
## 67	4.167	78
## 68	4.700	78
## 69	2.067	65
## 70	4.700	73
## 71	4.033	82
## 72	1.967	56
## 73	4.500	79
## 74	4.000	71
## 75	1.983	62
## 76	5.067	76
## 77	2.017	60
## 78	4.567	78
## 79	3.883	76
## 80	3.600	83
## 81	4.133	75
## 82	4.333	82
## 83	4.100	70
## 84	2.633	65
## 85	4.067	73
## 86	4.933	88
## 87	3.950	76
## 88	4.517	80
## 89	2.167	48
## 90	4.000	86
## 91	2.200	60
## 92	4.333	90
## 93	1.867	50
## 94	4.817	78
## 95	1.833	63
## 96	4.300	72
## 97	4.667	84
## 98	3.750	75
## 99	1.867	51
## 100	4.900	82
## 101	2.483	62
## 102	4.367	88
## 103	2.100	49

## 104	4.500	83
## 105	4.050	81
## 106	1.867	47
## 107	4.700	84
## 108	1.783	52
## 109	4.850	86
## 110	3.683	81
## 111	4.733	75
## 112	2.300	59
## 113	4.900	89
## 114	4.417	79
## 115	1.700	59
## 116	4.633	81
## 117	2.317	50
## 118	4.600	85
## 119	1.817	59
## 120	4.417	87
## 121	2.617	53
## 122	4.067	69
## 123	4.250	77
## 124	1.967	56
## 125	4.600	88
## 126	3.767	81
## 127	1.917	45
## 128	4.500	82
## 129	2.267	55
## 130	4.650	90
## 131	1.867	45
## 132	4.167	83
## 133	2.800	56
## 134	4.333	89
## 135	1.833	46
## 136	4.383	82
## 137	1.883	51
## 138	4.933	86
## 139	2.033	53
## 140	3.733	79
## 141	4.233	81
## 142	2.233	60
## 143	4.533	82
## 144	4.817	77
## 145	4.333	76
## 146	1.983	59
## 147	4.633	80
## 148	2.017	49
## 149	5.100	96
## 150	1.800	53
## 151	5.033	77
## 152	4.000	77
## 153	2.400	65
## 154	4.600	81
## 155	3.567	71

## 156	4.000	70
## 157	4.500	81
## 158	4.083	93
## 159	1.800	53
## 160	3.967	89
## 161	2.200	45
## 162	4.150	86
## 163	2.000	58
## 164	3.833	78
## 165	3.500	66
## 166	4.583	76
## 167	2.367	63
## 168	5.000	88
## 169	1.933	52
## 170	4.617	93
## 171	1.917	49
## 172	2.083	57
## 173	4.583	77
## 174	3.333	68
## 175	4.167	81
## 176	4.333	81
## 177	4.500	73
## 178	2.417	50
## 179	4.000	85
## 180	4.167	74
## 181	1.883	55
## 182	4.583	77
## 183	4.250	83
## 184	3.767	83
## 185	2.033	51
## 186	4.433	78
## 187	4.083	84
## 188	1.833	46
## 189	4.417	83
## 190	2.183	55
## 191	4.800	81
## 192	1.833	57
## 193	4.800	76
## 194	4.100	84
## 195	3.966	77
## 196	4.233	81
## 197	3.500	87
## 198	4.366	77
## 199	2.250	51
## 200	4.667	78
## 201	2.100	60
## 202	4.350	82
## 203	4.133	91
## 204	1.867	53
## 205	4.600	78
## 206	1.783	46
## 207	4.367	77

## 208	3.850	84
## 209	1.933	49
## 210	4.500	83
## 211	2.383	71
## 212	4.700	80
## 213	1.867	49
## 214	3.833	75
## 215	3.417	64
## 216	4.233	76
## 217	2.400	53
## 218	4.800	94
## 219	2.000	55
## 220	4.150	76
## 221	1.867	50
## 222	4.267	82
## 223	1.750	54
## 224	4.483	75
## 225	4.000	78
## 226	4.117	79
## 227	4.083	78
## 228	4.267	78
## 229	3.917	70
## 230	4.550	79
## 231	4.083	70
## 232	2.417	54
## 233	4.183	86
## 234	2.217	50
## 235	4.450	90
## 236	1.883	54
## 237	1.850	54
## 238	4.283	77
## 239	3.950	79
## 240	2.333	64
## 241	4.150	75
## 242	2.350	47
## 243	4.933	86
## 244	2.900	63
## 245	4.583	85
## 246	3.833	82
## 247	2.083	57
## 248	4.367	82
## 249	2.133	67
## 250	4.350	74
## 251	2.200	54
## 252	4.450	83
## 253	3.567	73
## 254	4.500	73
## 255	4.150	88
## 256	3.817	80
## 257	3.917	71
## 258	4.450	83
## 259	2.000	56

```
## 260      4.283      79
## 261      4.767      78
## 262      4.533      84
## 263      1.850      58
## 264      4.250      83
## 265      1.983      43
## 266      2.250      60
## 267      4.750      75
## 268      4.117      81
## 269      2.150      46
## 270      4.417      90
## 271      1.817      46
## 272      4.467      74
```

```
summary(Geiser)
```

```
##      eruptions      waiting
## Min.   :1.600   Min.   :43.0
## 1st Qu.:2.163   1st Qu.:58.0
## Median :4.000   Median :76.0
## Mean   :3.488   Mean   :70.9
## 3rd Qu.:4.454   3rd Qu.:82.0
## Max.   :5.100   Max.   :96.0
```

```
#Determinar media de las variables eruptions y waiting
```

```
mean(Geiser$eruptions)
```

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

```
mean(Geiser$waiting)
```

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

```
#Determinar desviación estandar de las variable eruptions y waiting
```

```
sd(Geiser$eruptions)
```

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

```
sd(Geiser$waiting)
```

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

```
#Prueba de normalidad de Shapiro-Wilk variable eruptions
```

```
shapiro.test(Geiser$eruptions)
```

```
##  
##  Shapiro-Wilk normality test  
##  
## data:  Geiser$eruptions  
## W = 0.84592, p-value = 9.036e-16
```

```
#d)Para conocer la correlacion entre las variables eruption y waiting  
#se hace una prueba de correlación.
```

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

```
##  
##  Pearson's product-moment correlation  
##  
## data:  Geiser$eruptions and Geiser$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
```

```
boxplot(Geiser$eruptions, Geiser$waiting)
```


