Lab_RegLogistica

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```
summary(cars)
```

```
##      speed           dist       
##  Min.   : 4.0   Min.   :  2.00  
##  1st Qu.:12.0   1st Qu.: 26.00  
##  Median :15.0   Median : 36.00  
##  Mean   :15.4   Mean   : 42.98  
##  3rd Qu.:19.0   3rd Qu.: 56.00  
##  Max.   :25.0   Max.   :120.00
```

#Carga librerias

```
library(corrplot)
```

```
## corrplot 0.92 loaded
```

```
library(caret)
```

```
## Loading required package: ggplot2
```

```
## Loading required package: lattice
```

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(ggplot2)
```

#Leer archivo csv

```
data <- read.csv2("titanic.csv")
data
```

```
##      Passengerid  Age     Fare Sex sibsp Parch Pclass Embarked
X2urvived
## 1              1   22     7.25   0     1     0      3        2
```

```
## 2              2   38  71.2833   1     1     0      1        0
1
## 3              3   26    7.925   1     0     0      3        2
1
## 4              4   35     53.1   1     1     0      1        2
1
## 5              5   35     8.05   0     0     0      3        2
0
## 6              6   28   8.4583   0     0     0      3        1
0
## 7              7   54  51.8625   0     0     0      1        2
0
## 8              8    2   21.075   0     3     1      3        2
0
## 9              9   27  11.1333   1     0     2      3        2
1
## 10            10   14  30.0708   1     1     0      2        0
1
## 11            11    4     16.7   1     1     1      3        2
1
## 12            12   58    26.55   1     0     0      1        2
1
## 13            13   20     8.05   0     0     0      3        2
0
## 14            14   39   31.275   0     1     5      3        2
0
## 15            15   14   7.8542   1     0     0      3        2
0
## 16            16   55       16   1     0     0      2        2
1
## 17            17    2   29.125   0     4     1      3        1
0
## 18            18   28       13   0     0     0      2        2
1
## 19            19   31       18   1     1     0      3        2
0
## 20            20   28    7.225   1     0     0      3        0
1
## 21            21   35       26   0     0     0      2        2
0
## 22            22   34       13   0     0     0      2        2
1
## 23            23   15   8.0292   1     0     0      3        1
1
## 24            24   28     35.5   0     0     0      1        2
1
## 25            25    8   21.075   1     3     1      3        2
0
## 26            26   38  31.3875   1     1     5      3        2
```

```
1
## 27            27   28    7.225   0     0     0      3        0
0
## 28            28   19      263   0     3     2      1        2
0
## 29            29   28   7.8792   1     0     0      3        1
1
## 30            30   28   7.8958   0     0     0      3        2
0
## 31            31   40  27.7208   0     0     0      1        0
0
## 32            32   28 146.5208   1     1     0      1        0
1
## 33            33   28     7.75   1     0     0      3        1
1
## 34            34   66     10.5   0     0     0      2        2
0
## 35            35   28  82.1708   0     1     0      1        0
0
## 36            36   42       52   0     1     0      1        2
0
## 37            37   28   7.2292   0     0     0      3        0
1
## 38            38   21     8.05   0     0     0      3        2
0
## 39            39   18       18   1     2     0      3        2
0
## 40            40   14  11.2417   1     1     0      3        0
1
## 41            41   40    9.475   1     1     0      3        2
0
## 42            42   27       21   1     1     0      2        2
0
## 43            43   28   7.8958   0     0     0      3        0
0
## 44            44    3  41.5792   1     1     2      2        0
1
## 45            45   19   7.8792   1     0     0      3        1
1
## 46            46   28     8.05   0     0     0      3        2
0
## 47            47   28     15.5   0     1     0      3        1
0
## 48            48   28     7.75   1     0     0      3        1
1
## 49            49   28  21.6792   0     2     0      3        0
0
## 50            50   18     17.8   1     1     0      3        2
0
## 51            51    7  39.6875   0     4     1      3        2
```

```
0
## 52            52   21      7.8   0     0     0      3        2
0
## 53            53   49  76.7292   1     1     0      1        0
1
## 54            54   29       26   1     1     0      2        2
1
## 55            55   65  61.9792   0     0     1      1        0
0
## 56            56   28     35.5   0     0     0      1        2
1
## 57            57   21     10.5   1     0     0      2        2
1
## 58            58 28.5   7.2292   0     0     0      3        0
0
## 59            59    5    27.75   1     1     2      2        2
1
## 60            60   11     46.9   0     5     2      3        2
0
## 61            61   22   7.2292   0     0     0      3        0
0
## 62            62   38       80   1     0     0      1       NA
1
## 63            63   45   83.475   0     1     0      1        2
0
## 64            64    4     27.9   0     3     2      3        2
0
## 65            65   28  27.7208   0     0     0      1        0
0
## 66            66   28  15.2458   0     1     1      3        0
1
## 67            67   29     10.5   1     0     0      2        2
1
## 68            68   19   8.1583   0     0     0      3        2
0
## 69            69   17    7.925   1     4     2      3        2
1
## 70            70   26   8.6625   0     2     0      3        2
0
## 71            71   32     10.5   0     0     0      2        2
0
## 72            72   16     46.9   1     5     2      3        2
0
## 73            73   21     73.5   0     0     0      2        2
0
## 74            74   26  14.4542   0     1     0      3        0
0
## 75            75   32  56.4958   0     0     0      3        2
1
## 76            76   25     7.65   0     0     0      3        2
```

```
0
## 77            77   28   7.8958   0     0     0      3        2
0
## 78            78   28     8.05   0     0     0      3        2
0
## 79            79 0.83       29   0     0     2      2        2
1
## 80            80   30   12.475   1     0     0      3        2
1
## 81            81   22        9   0     0     0      3        2
0
## 82            82   29      9.5   0     0     0      3        2
1
## 83            83   28   7.7875   1     0     0      3        1
1
## 84            84   28     47.1   0     0     0      1        2
0
## 85            85   17     10.5   1     0     0      2        2
1
## 86            86   33    15.85   1     3     0      3        2
1
## 87            87   16   34.375   0     1     3      3        2
0
## 88            88   28     8.05   0     0     0      3        2
0
## 89            89   23      263   1     3     2      1        2
1
## 90            90   24     8.05   0     0     0      3        2
0
## 91            91   29     8.05   0     0     0      3        2
0
## 92            92   20   7.8542   0     0     0      3        2
0
## 93            93   46   61.175   0     1     0      1        2
0
## 94            94   26   20.575   0     1     2      3        2
0
## 95            95   59     7.25   0     0     0      3        2
0
## 96            96   28     8.05   0     0     0      3        2
0
## 97            97   71  34.6542   0     0     0      1        0
0
## 98            98   23  63.3583   0     0     1      1        0
1
## 99            99   34       23   1     0     1      2        2
1
## 100          100   34       26   0     1     0      2        2
0
## 101          101   28   7.8958   1     0     0      3        2
```

```
0
## 102          102   28   7.8958   0     0     0      3        2
0
## 103          103   21  77.2875   0     0     1      1        2
0
## 104          104   33   8.6542   0     0     0      3        2
0
## 105          105   37    7.925   0     2     0      3        2
0
## 106          106   28   7.8958   0     0     0      3        2
0
## 107          107   21     7.65   1     0     0      3        2
1
## 108          108   28    7.775   0     0     0      3        2
1
## 109          109   38   7.8958   0     0     0      3        2
0
## 110          110   28    24.15   1     1     0      3        1
1
## 111          111   47       52   0     0     0      1        2
0
## 112          112 14.5  14.4542   1     1     0      3        0
0
## 113          113   22     8.05   0     0     0      3        2
0
## 114          114   20    9.825   1     1     0      3        2
0
## 115          115   17  14.4583   1     0     0      3        0
0
## 116          116   21    7.925   0     0     0      3        2
0
## 117          117 70.5     7.75   0     0     0      3        1
0
## 118          118   29       21   0     1     0      2        2
0
## 119          119   24 247.5208   0     0     1      1        0
0
## 120          120    2   31.275   1     4     2      3        2
0
## 121          121   21     73.5   0     2     0      2        2
0
## 122          122   28     8.05   0     0     0      3        2
0
## 123          123 32.5  30.0708   0     1     0      2        0
0
## 124          124 32.5       13   1     0     0      2        2
1
## 125          125   54  77.2875   0     0     1      1        2
0
## 126          126   12  11.2417   0     1     0      3        0
```

```
1
## 127          127   28     7.75   0     0     0      3        1
0
## 128          128   24   7.1417   0     0     0      3        2
1
## 129          129   28  22.3583   1     1     1      3        0
1
## 130          130   45    6.975   0     0     0      3        2
0
## 131          131   33   7.8958   0     0     0      3        0
0
## 132          132   20     7.05   0     0     0      3        2
0
## 133          133   47     14.5   1     1     0      3        2
0
## 134          134   29       26   1     1     0      2        2
1
## 135          135   25       13   0     0     0      2        2
0
## 136          136   23  15.0458   0     0     0      2        0
0
## 137          137   19  26.2833   1     0     2      1        2
1
## 138          138   37     53.1   0     1     0      1        2
0
## 139          139   16   9.2167   0     0     0      3        2
0
## 140          140   24     79.2   0     0     0      1        0
0
## 141          141   28  15.2458   1     0     2      3        0
0
## 142          142   22     7.75   1     0     0      3        2
1
## 143          143   24    15.85   1     1     0      3        2
1
## 144          144   19     6.75   0     0     0      3        1
0
## 145          145   18     11.5   0     0     0      2        2
0
## 146          146   19    36.75   0     1     1      2        2
0
## 147          147   27   7.7958   0     0     0      3        2
1
## 148          148    9   34.375   1     2     2      3        2
0
## 149          149 36.5       26   0     0     2      2        2
0
## 150          150   42       13   0     0     0      2        2
0
## 151          151   51   12.525   0     0     0      2        2
```

```
0
## 152          152   22     66.6   1     1     0      1        2
1
## 153          153 55.5     8.05   0     0     0      3        2
0
## 154          154 40.5     14.5   0     0     2      3        2
0
## 155          155   28   7.3125   0     0     0      3        2
0
## 156          156   51  61.3792   0     0     1      1        0
0
## 157          157   16   7.7333   1     0     0      3        1
1
## 158          158   30     8.05   0     0     0      3        2
0
## 159          159   28   8.6625   0     0     0      3        2
0
## 160          160   28    69.55   0     8     2      3        2
0
## 161          161   44     16.1   0     0     1      3        2
0
## 162          162   40    15.75   1     0     0      2        2
1
## 163          163   26    7.775   0     0     0      3        2
0
## 164          164   17   8.6625   0     0     0      3        2
0
## 165          165    1  39.6875   0     4     1      3        2
0
## 166          166    9   20.525   0     0     2      3        2
1
## 167          167   28       55   1     0     1      1        2
1
## 168          168   45     27.9   1     1     4      3        2
0
## 169          169   28   25.925   0     0     0      1        2
0
## 170          170   28  56.4958   0     0     0      3        2
0
## 171          171   61     33.5   0     0     0      1        2
0
## 172          172    4   29.125   0     4     1      3        1
0
## 173          173    1  11.1333   1     1     1      3        2
1
## 174          174   21    7.925   0     0     0      3        2
0
## 175          175   56  30.6958   0     0     0      1        0
0
## 176          176   18   7.8542   0     1     1      3        2
```

```
0
## 177          177   28  25.4667   0     3     1      3        2
0
## 178          178   50  28.7125   1     0     0      1        0
0
## 179          179   30       13   0     0     0      2        2
0
## 180          180   36        0   0     0     0      3        2
0
## 181          181   28    69.55   1     8     2      3        2
0
## 182          182   28    15.05   0     0     0      2        0
0
## 183          183    9  31.3875   0     4     2      3        2
0
## 184          184    1       39   0     2     1      2        2
1
## 185          185    4   22.025   1     0     2      3        2
1
## 186          186   28       50   0     0     0      1        2
0
## 187          187   28     15.5   1     1     0      3        1
1
## 188          188   45    26.55   0     0     0      1        2
1
## 189          189   40     15.5   0     1     1      3        1
0
## 190          190   36   7.8958   0     0     0      3        2
0
## 191          191   32       13   1     0     0      2        2
1
## 192          192   19       13   0     0     0      2        2
0
## 193          193   19   7.8542   1     1     0      3        2
1
## 194          194    3       26   0     1     1      2        2
1
## 195          195   44  27.7208   1     0     0      1        0
1
## 196          196   58 146.5208   1     0     0      1        0
1
## 197          197   28     7.75   0     0     0      3        1
0
## 198          198   42   8.4042   0     0     1      3        2
0
## 199          199   28     7.75   1     0     0      3        1
1
## 200          200   24       13   1     0     0      2        2
0
## 201          201   28      9.5   0     0     0      3        2
```

```
0
## 202          202   28    69.55   0     8     2      3        2
0
## 203          203   34   6.4958   0     0     0      3        2
0
## 204          204 45.5    7.225   0     0     0      3        0
0
## 205          205   18     8.05   0     0     0      3        2
1
## 206          206    2  10.4625   1     0     1      3        2
0
## 207          207   32    15.85   0     1     0      3        2
0
## 208          208   26  18.7875   0     0     0      3        0
1
## 209          209   16     7.75   1     0     0      3        1
1
## 210          210   40       31   0     0     0      1        0
1
## 211          211   24     7.05   0     0     0      3        2
0
## 212          212   35       21   1     0     0      2        2
1
## 213          213   22     7.25   0     0     0      3        2
0
## 214          214   30       13   0     0     0      2        2
0
## 215          215   28     7.75   0     1     0      3        1
0
## 216          216   31  113.275   1     1     0      1        0
1
## 217          217   27    7.925   1     0     0      3        2
1
## 218          218   42       27   0     1     0      2        2
0
## 219          219   32  76.2917   1     0     0      1        0
1
## 220          220   30     10.5   0     0     0      2        2
0
## 221          221   16     8.05   0     0     0      3        2
1
## 222          222   27       13   0     0     0      2        2
0
## 223          223   51     8.05   0     0     0      3        2
0
## 224          224   28   7.8958   0     0     0      3        2
0
## 225          225   38       90   0     1     0      1        2
1
## 226          226   22     9.35   0     0     0      3        2
```

```
0
## 227          227   19     10.5   0     0     0      2        2
1
## 228          228 20.5     7.25   0     0     0      3        2
0
## 229          229   18       13   0     0     0      2        2
0
## 230          230   28  25.4667   1     3     1      3        2
0
## 231          231   35   83.475   1     1     0      1        2
1
## 232          232   29    7.775   0     0     0      3        2
0
## 233          233   59     13.5   0     0     0      2        2
0
## 234          234    5  31.3875   1     4     2      3        2
1
## 235          235   24     10.5   0     0     0      2        2
0
## 236          236   28     7.55   1     0     0      3        2
0
## 237          237   44       26   0     1     0      2        2
0
## 238          238    8    26.25   1     0     2      2        2
1
## 239          239   19     10.5   0     0     0      2        2
0
## 240          240   33   12.275   0     0     0      2        2
0
## 241          241   28  14.4542   1     1     0      3        0
0
## 242          242   28     15.5   1     1     0      3        1
1
## 243          243   29     10.5   0     0     0      2        2
0
## 244          244   22    7.125   0     0     0      3        2
0
## 245          245   30    7.225   0     0     0      3        0
0
## 246          246   44       90   0     2     0      1        1
0
## 247          247   25    7.775   1     0     0      3        2
0
## 248          248   24     14.5   1     0     2      2        2
1
## 249          249   37  52.5542   0     1     1      1        2
1
## 250          250   54       26   0     1     0      2        2
0
## 251          251   28     7.25   0     0     0      3        2
```

```
0
## 252          252   29  10.4625   1     1     1      3        2
0
## 253          253   62    26.55   0     0     0      1        2
0
## 254          254   30     16.1   0     1     0      3        2
0
## 255          255   41  20.2125   1     0     2      3        2
0
## 256          256   29  15.2458   1     0     2      3        0
1
## 257          257   28     79.2   1     0     0      1        0
1
## 258          258   30     86.5   1     0     0      1        2
1
## 259          259   35 512.3292   1     0     0      1        0
1
## 260          260   50       26   1     0     1      2        2
1
## 261          261   28     7.75   0     0     0      3        1
0
## 262          262    3  31.3875   0     4     2      3        2
1
## 263          263   52    79.65   0     1     1      1        2
0
## 264          264   40        0   0     0     0      1        2
0
## 265          265   28     7.75   1     0     0      3        1
0
## 266          266   36     10.5   0     0     0      2        2
0
## 267          267   16  39.6875   0     4     1      3        2
0
## 268          268   25    7.775   0     1     0      3        2
1
## 269          269   58 153.4625   1     0     1      1        2
1
## 270          270   35 135.6333   1     0     0      1        2
1
## 271          271   28       31   0     0     0      1        2
0
## 272          272   25        0   0     0     0      3        2
1
## 273          273   41     19.5   1     0     1      2        2
1
## 274          274   37     29.7   0     0     1      1        0
0
## 275          275   28     7.75   1     0     0      3        1
1
## 276          276   63  77.9583   1     1     0      1        2
```

```
1
## 277          277   45     7.75   1     0     0      3        2
0
## 278          278   28        0   0     0     0      2        2
0
## 279          279    7   29.125   0     4     1      3        1
0
## 280          280   35    20.25   1     1     1      3        2
1
## 281          281   65     7.75   0     0     0      3        1
0
## 282          282   28   7.8542   0     0     0      3        2
0
## 283          283   16      9.5   0     0     0      3        2
0
## 284          284   19     8.05   0     0     0      3        2
1
## 285          285   28       26   0     0     0      1        2
0
## 286          286   33   8.6625   0     0     0      3        0
0
## 287          287   30      9.5   0     0     0      3        2
1
## 288          288   22   7.8958   0     0     0      3        2
0
## 289          289   42       13   0     0     0      2        2
1
## 290          290   22     7.75   1     0     0      3        1
1
## 291          291   26    78.85   1     0     0      1        2
1
## 292          292   19  91.0792   1     1     0      1        0
1
## 293          293   36   12.875   0     0     0      2        0
0
## 294          294   24     8.85   1     0     0      3        2
0
## 295          295   24   7.8958   0     0     0      3        2
0
## 296          296   28  27.7208   0     0     0      1        0
0
## 297          297 23.5   7.2292   0     0     0      3        0
0
## 298          298    2   151.55   1     1     2      1        2
0
## 299          299   28     30.5   0     0     0      1        2
1
## 300          300   50 247.5208   1     0     1      1        0
1
## 301          301   28     7.75   1     0     0      3        1
```

```
1
## 302          302   28    23.25   0     2     0      3        1
1
## 303          303   19        0   0     0     0      3        2
0
## 304          304   28    12.35   1     0     0      2        1
1
## 305          305   28     8.05   0     0     0      3        2
0
## 306          306 0.92   151.55   0     1     2      1        2
1
## 307          307   28 110.8833   1     0     0      1        0
1
## 308          308   17    108.9   1     1     0      1        0
1
## 309          309   30       24   0     1     0      2        0
0
## 310          310   30  56.9292   1     0     0      1        0
1
## 311          311   24  83.1583   1     0     0      1        0
1
## 312          312   18  262.375   1     2     2      1        0
1
## 313          313   26       26   1     1     1      2        2
0
## 314          314   28   7.8958   0     0     0      3        2
0
## 315          315   43    26.25   0     1     1      2        2
0
## 316          316   26   7.8542   1     0     0      3        2
1
## 317          317   24       26   1     1     0      2        2
1
## 318          318   54       14   0     0     0      2        2
0
## 319          319   31 164.8667   1     0     2      1        2
1
## 320          320   40    134.5   1     1     1      1        0
1
## 321          321   22     7.25   0     0     0      3        2
0
## 322          322   27   7.8958   0     0     0      3        2
0
## 323          323   30    12.35   1     0     0      2        1
1
## 324          324   22       29   1     1     1      2        2
1
## 325          325   28    69.55   0     8     2      3        2
0
## 326          326   36 135.6333   1     0     0      1        0
```

```
1
## 327          327   61   6.2375   0     0     0      3        2
0
## 328          328   36       13   1     0     0      2        2
1
## 329          329   31   20.525   1     1     1      3        2
1
## 330          330   16  57.9792   1     0     1      1        0
1
## 331          331   28    23.25   1     2     0      3        1
1
## 332          332 45.5     28.5   0     0     0      1        2
0
## 333          333   38 153.4625   0     0     1      1        2
0
## 334          334   16       18   0     2     0      3        2
0
## 335          335   28   133.65   1     1     0      1        2
1
## 336          336   28   7.8958   0     0     0      3        2
0
## 337          337   29     66.6   0     1     0      1        2
0
## 338          338   41    134.5   1     0     0      1        0
1
## 339          339   45     8.05   0     0     0      3        2
1
## 340          340   45     35.5   0     0     0      1        2
0
## 341          341    2       26   0     1     1      2        2
1
## 342          342   24      263   1     3     2      1        2
1
## 343          343   28       13   0     0     0      2        2
0
## 344          344   25       13   0     0     0      2        2
0
## 345          345   36       13   0     0     0      2        2
0
## 346          346   24       13   1     0     0      2        2
1
## 347          347   40       13   1     0     0      2        2
1
## 348          348   28     16.1   1     1     0      3        2
1
## 349          349    3     15.9   0     1     1      3        2
1
## 350          350   42   8.6625   0     0     0      3        2
0
## 351          351   23    9.225   0     0     0      3        2
```

```
0
## 352          352   28       35   0     0     0      1        2
0
## 353          353   15   7.2292   0     1     1      3        0
0
## 354          354   25     17.8   0     1     0      3        2
0
## 355          355   28    7.225   0     0     0      3        0
0
## 356          356   28      9.5   0     0     0      3        2
0
## 357          357   22       55   1     0     1      1        2
1
## 358          358   38       13   1     0     0      2        2
0
## 359          359   28   7.8792   1     0     0      3        1
1
## 360          360   28   7.8792   1     0     0      3        1
1
## 361          361   40     27.9   0     1     4      3        2
0
## 362          362   29  27.7208   0     1     0      2        0
0
## 363          363   45  14.4542   1     0     1      3        0
0
## 364          364   35     7.05   0     0     0      3        2
0
## 365          365   28     15.5   0     1     0      3        1
0
## 366          366   30     7.25   0     0     0      3        2
0
## 367          367   60    75.25   1     1     0      1        0
1
## 368          368   28   7.2292   1     0     0      3        0
1
## 369          369   28     7.75   1     0     0      3        1
1
## 370          370   24     69.3   1     0     0      1        0
1
## 371          371   25  55.4417   0     1     0      1        0
1
## 372          372   18   6.4958   0     1     0      3        2
0
## 373          373   19     8.05   0     0     0      3        2
0
## 374          374   22 135.6333   0     0     0      1        0
0
## 375          375    3   21.075   1     3     1      3        2
0
## 376          376   28  82.1708   1     1     0      1        0
```

```
1
## 377          377   22     7.25   1     0     0      3        2
1
## 378          378   27    211.5   0     0     2      1        0
0
## 379          379   20   4.0125   0     0     0      3        0
0
## 380          380   19    7.775   0     0     0      3        2
0
## 381          381   42  227.525   1     0     0      1        0
1
## 382          382    1  15.7417   1     0     2      3        0
1
## 383          383   32    7.925   0     0     0      3        2
0
## 384          384   35       52   1     1     0      1        2
1
## 385          385   28   7.8958   0     0     0      3        2
0
## 386          386   18     73.5   0     0     0      2        2
0
## 387          387    1     46.9   0     5     2      3        2
0
## 388          388   36       13   1     0     0      2        2
1
## 389          389   28   7.7292   0     0     0      3        1
0
## 390          390   17       12   1     0     0      2        0
1
## 391          391   36      120   0     1     2      1        2
1
## 392          392   21   7.7958   0     0     0      3        2
1
## 393          393   28    7.925   0     2     0      3        2
0
## 394          394   23  113.275   1     1     0      1        0
1
## 395          395   24     16.7   1     0     2      3        2
1
## 396          396   22   7.7958   0     0     0      3        2
0
## 397          397   31   7.8542   1     0     0      3        2
0
## 398          398   46       26   0     0     0      2        2
0
## 399          399   23     10.5   0     0     0      2        2
0
## 400          400   28    12.65   1     0     0      2        2
1
## 401          401   39    7.925   0     0     0      3        2
```

```
1
## 402          402   26     8.05   0     0     0      3        2
0
## 403          403   21    9.825   1     1     0      3        2
0
## 404          404   28    15.85   0     1     0      3        2
0
## 405          405   20   8.6625   1     0     0      3        2
0
## 406          406   34       21   0     1     0      2        2
0
## 407          407   51     7.75   0     0     0      3        2
0
## 408          408    3    18.75   0     1     1      2        2
1
## 409          409   21    7.775   0     0     0      3        2
0
## 410          410   28  25.4667   1     3     1      3        2
0
## 411          411   28   7.8958   0     0     0      3        2
0
## 412          412   28   6.8583   0     0     0      3        1
0
## 413          413   33       90   1     1     0      1        1
1
## 414          414   28        0   0     0     0      2        2
0
## 415          415   44    7.925   0     0     0      3        2
1
## 416          416   28     8.05   1     0     0      3        2
0
## 417          417   34     32.5   1     1     1      2        2
1
## 418          418   18       13   1     0     2      2        2
1
## 419          419   30       13   0     0     0      2        2
0
## 420          420   10    24.15   1     0     2      3        2
0
## 421          421   28   7.8958   0     0     0      3        0
0
## 422          422   21   7.7333   0     0     0      3        1
0
## 423          423   29    7.875   0     0     0      3        2
0
## 424          424   28     14.4   1     1     1      3        2
0
## 425          425   18  20.2125   0     1     1      3        2
0
## 426          426   28     7.25   0     0     0      3        2
```

```
## 427          427   28       26   1     1     0      2         2
1
## 428          428   19       26   1     0     0      2         2
1
## 429          429   28     7.75   0     0     0      3         1
0
## 430          430   32     8.05   0     0     0      3         2
1
## 431          431   28    26.55   0     0     0      1         2
1
## 432          432   28     16.1   1     1     0      3         2
1
## 433          433   42       26   1     1     0      2         2
1
## 434          434   17    7.125   0     0     0      3         2
0
## 435          435   50     55.9   0     1     0      1         2
0
## 436          436   14      120   1     1     2      1         2
1
## 437          437   21   34.375   1     2     2      3         2
0
## 438          438   24    18.75   1     2     3      2         2
1
## 439          439   64      263   0     1     4      1         2
0
## 440          440   31     10.5   0     0     0      2         2
0
## 441          441   45    26.25   1     1     1      2         2
1
## 442          442   20      9.5   0     0     0      3         2
0
## 443          443   25    7.775   0     1     0      3         2
0
## 444          444   28       13   1     0     0      2         2
1
## 445          445   28   8.1125   0     0     0      3         2
1
## 446          446    4  81.8583   0     0     2      1         2
1
## 447          447   13     19.5   1     0     1      2         2
1
## 448          448   34    26.55   0     0     0      1         2
1
## 449          449    5  19.2583   1     2     1      3         0
1
## 450          450   52     30.5   0     0     0      1         2
1
## 451          451   36    27.75   0     1     2      2         2
```

```
0
## 452          452   28  19.9667   0     1     0      3        2
0
## 453          453   30    27.75   0     0     0      1        0
0
## 454          454   49  89.1042   0     1     0      1        0
1
## 455          455   28     8.05   0     0     0      3        2
0
## 456          456   29   7.8958   0     0     0      3        0
1
## 457          457   65    26.55   0     0     0      1        2
0
## 458          458   28  51.8625   1     1     0      1        2
1
## 459          459   50     10.5   1     0     0      2        2
1
## 460          460   28     7.75   0     0     0      3        1
0
## 461          461   48    26.55   0     0     0      1        2
1
## 462          462   34     8.05   0     0     0      3        2
0
## 463          463   47     38.5   0     0     0      1        2
0
## 464          464   48       13   0     0     0      2        2
0
## 465          465   28     8.05   0     0     0      3        2
0
## 466          466   38     7.05   0     0     0      3        2
0
## 467          467   28        0   0     0     0      2        2
0
## 468          468   56    26.55   0     0     0      1        2
0
## 469          469   28    7.725   0     0     0      3        1
0
## 470          470 0.75  19.2583   1     2     1      3        0
1
## 471          471   28     7.25   0     0     0      3        2
0
## 472          472   38   8.6625   0     0     0      3        2
0
## 473          473   33    27.75   1     1     2      2        2
1
## 474          474   23  13.7917   1     0     0      2        0
1
## 475          475   22   9.8375   1     0     0      3        2
0
## 476          476   28       52   0     0     0      1        2
```

```
0
## 477          477   34       21   0     1     0      2         2
0
## 478          478   29   7.0458   0     1     0      3         2
0
## 479          479   22   7.5208   0     0     0      3         2
0
## 480          480    2  12.2875   1     0     1      3         2
1
## 481          481    9     46.9   0     5     2      3         2
0
## 482          482   28        0   0     0     0      2         2
0
## 483          483   50     8.05   0     0     0      3         2
0
## 484          484   63   9.5875   1     0     0      3         2
1
## 485          485   25  91.0792   0     1     0      1         0
1
## 486          486   28  25.4667   1     3     1      3         2
0
## 487          487   35       90   1     1     0      1         2
1
## 488          488   58     29.7   0     0     0      1         0
0
## 489          489   30     8.05   0     0     0      3         2
0
## 490          490    9     15.9   0     1     1      3         2
1
## 491          491   28  19.9667   0     1     0      3         2
0
## 492          492   21     7.25   0     0     0      3         2
0
## 493          493   55     30.5   0     0     0      1         2
0
## 494          494   71  49.5042   0     0     0      1         0
0
## 495          495   21     8.05   0     0     0      3         2
0
## 496          496   28  14.4583   0     0     0      3         0
0
## 497          497   54  78.2667   1     1     0      1         0
1
## 498          498   28     15.1   0     0     0      3         2
0
## 499          499   25   151.55   1     1     2      1         2
0
## 500          500   24   7.7958   0     0     0      3         2
0
## 501          501   17   8.6625   0     0     0      3         2
```

```
0
## 502          502   21     7.75   1     0     0      3        1
0
## 503          503   28   7.6292   1     0     0      3        1
0
## 504          504   37   9.5875   1     0     0      3        2
0
## 505          505   16     86.5   1     0     0      1        2
1
## 506          506   18    108.9   0     1     0      1        0
0
## 507          507   33       26   1     0     2      2        2
1
## 508          508   28    26.55   0     0     0      1        2
1
## 509          509   28   22.525   0     0     0      3        2
0
## 510          510   26  56.4958   0     0     0      3        2
1
## 511          511   29     7.75   0     0     0      3        1
1
## 512          512   28     8.05   0     0     0      3        2
0
## 513          513   36  26.2875   0     0     0      1        2
1
## 514          514   54     59.4   1     1     0      1        0
1
## 515          515   24   7.4958   0     0     0      3        2
0
## 516          516   47  34.0208   0     0     0      1        2
0
## 517          517   34     10.5   1     0     0      2        2
1
## 518          518   28    24.15   0     0     0      3        1
0
## 519          519   36       26   1     1     0      2        2
1
## 520          520   32   7.8958   0     0     0      3        2
0
## 521          521   30     93.5   1     0     0      1        2
1
## 522          522   22   7.8958   0     0     0      3        2
0
## 523          523   28    7.225   0     0     0      3        0
0
## 524          524   44  57.9792   1     0     1      1        0
1
## 525          525   28   7.2292   0     0     0      3        0
0
## 526          526 40.5     7.75   0     0     0      3        1
```

```
0
## 527          527   50     10.5   1     0     0      2        2
1
## 528          528   28 221.7792   0     0     0      1        2
0
## 529          529   39    7.925   0     0     0      3        2
0
## 530          530   23     11.5   0     2     1      2        2
0
## 531          531    2       26   1     1     1      2        2
1
## 532          532   28   7.2292   0     0     0      3        0
0
## 533          533   17   7.2292   0     1     1      3        0
0
## 534          534   28  22.3583   1     0     2      3        0
1
## 535          535   30   8.6625   1     0     0      3        2
0
## 536          536    7    26.25   1     0     2      2        2
1
## 537          537   45    26.55   0     0     0      1        2
0
## 538          538   30  106.425   1     0     0      1        0
1
## 539          539   28     14.5   0     0     0      3        2
0
## 540          540   22     49.5   1     0     2      1        0
1
## 541          541   36       71   1     0     2      1        2
1
## 542          542    9   31.275   1     4     2      3        2
0
## 543          543   11   31.275   1     4     2      3        2
0
## 544          544   32       26   0     1     0      2        2
1
## 545          545   50  106.425   0     1     0      1        0
0
## 546          546   64       26   0     0     0      1        2
0
## 547          547   19       26   1     1     0      2        2
1
## 548          548   28  13.8625   0     0     0      2        0
1
## 549          549   33   20.525   0     1     1      3        2
0
## 550          550    8    36.75   0     1     1      2        2
1
## 551          551   17 110.8833   0     0     2      1        0
```

```
1
## 552          552   27       26   0     0     0      2         2
0
## 553          553   28   7.8292   0     0     0      3         1
0
## 554          554   22    7.225   0     0     0      3         0
1
## 555          555   22    7.775   1     0     0      3         2
1
## 556          556   62    26.55   0     0     0      1         2
0
## 557          557   48     39.6   1     1     0      1         0
1
## 558          558   28  227.525   0     0     0      1         0
0
## 559          559   39    79.65   1     1     1      1         2
1
## 560          560   36     17.4   1     1     0      3         2
1
## 561          561   28     7.75   0     0     0      3         1
0
## 562          562   40   7.8958   0     0     0      3         2
0
## 563          563   28     13.5   0     0     0      2         2
0
## 564          564   28     8.05   0     0     0      3         2
0
## 565          565   28     8.05   1     0     0      3         2
0
## 566          566   24    24.15   0     2     0      3         2
0
## 567          567   19   7.8958   0     0     0      3         2
0
## 568          568   29   21.075   1     0     4      3         2
0
## 569          569   28   7.2292   0     0     0      3         0
0
## 570          570   32   7.8542   0     0     0      3         2
1
## 571          571   62     10.5   0     0     0      2         2
1
## 572          572   53  51.4792   1     2     0      1         2
1
## 573          573   36  26.3875   0     0     0      1         2
1
## 574          574   28     7.75   1     0     0      3         1
1
## 575          575   16     8.05   0     0     0      3         2
0
## 576          576   19     14.5   0     0     0      3         2
```

```
0
## 577          577   34       13   1     0     0      2        2
1
## 578          578   39     55.9   1     1     0      1        2
1
## 579          579   28  14.4583   1     1     0      3        0
0
## 580          580   32    7.925   0     0     0      3        2
1
## 581          581   25       30   1     1     1      2        2
1
## 582          582   39 110.8833   1     1     1      1        0
1
## 583          583   54       26   0     0     0      2        2
0
## 584          584   36   40.125   0     0     0      1        0
0
## 585          585   28   8.7125   0     0     0      3        0
0
## 586          586   18    79.65   1     0     2      1        2
1
## 587          587   47       15   0     0     0      2        2
0
## 588          588   60     79.2   0     1     1      1        0
1
## 589          589   22     8.05   0     0     0      3        2
0
## 590          590   28     8.05   0     0     0      3        2
0
## 591          591   35    7.125   0     0     0      3        2
0
## 592          592   52  78.2667   1     1     0      1        0
1
## 593          593   47     7.25   0     0     0      3        2
0
## 594          594   28     7.75   1     0     2      3        1
0
## 595          595   37       26   0     1     0      2        2
0
## 596          596   36    24.15   0     1     1      3        2
0
## 597          597   28       33   1     0     0      2        2
1
## 598          598   49        0   0     0     0      3        2
0
## 599          599   28    7.225   0     0     0      3        0
0
## 600          600   49  56.9292   0     1     0      1        0
1
## 601          601   24       27   1     2     1      2        2
```

```
1
## 602          602   28   7.8958   0     0     0      3        2
0
## 603          603   28     42.4   0     0     0      1        2
0
## 604          604   44     8.05   0     0     0      3        2
0
## 605          605   35    26.55   0     0     0      1        0
1
## 606          606   36    15.55   0     1     0      3        2
0
## 607          607   30   7.8958   0     0     0      3        2
0
## 608          608   27     30.5   0     0     0      1        2
1
## 609          609   22  41.5792   1     1     2      2        0
1
## 610          610   40 153.4625   1     0     0      1        2
1
## 611          611   39   31.275   1     1     5      3        2
0
## 612          612   28     7.05   0     0     0      3        2
0
## 613          613   28     15.5   1     1     0      3        1
1
## 614          614   28     7.75   0     0     0      3        1
0
## 615          615   35     8.05   0     0     0      3        2
0
## 616          616   24       65   1     1     2      2        2
1
## 617          617   34     14.4   0     1     1      3        2
0
## 618          618   26     16.1   1     1     0      3        2
0
## 619          619    4       39   1     2     1      2        2
1
## 620          620   26     10.5   0     0     0      2        2
0
## 621          621   27  14.4542   0     1     0      3        0
0
## 622          622   42  52.5542   0     1     0      1        2
1
## 623          623   20  15.7417   0     1     1      3        0
1
## 624          624   21   7.8542   0     0     0      3        2
0
## 625          625   21     16.1   0     0     0      3        2
0
## 626          626   61  32.3208   0     0     0      1        2
```

```
0
## 627          627   57    12.35   0     0     0      2        1
0
## 628          628   21  77.9583   1     0     0      1        2
1
## 629          629   26   7.8958   0     0     0      3        2
0
## 630          630   28   7.7333   0     0     0      3        1
0
## 631          631   80       30   0     0     0      1        2
1
## 632          632   51   7.0542   0     0     0      3        2
0
## 633          633   32     30.5   0     0     0      1        0
1
## 634          634   28        0   0     0     0      1        2
0
## 635          635    9     27.9   1     3     2      3        2
0
## 636          636   28       13   1     0     0      2        2
1
## 637          637   32    7.925   0     0     0      3        2
0
## 638          638   31    26.25   0     1     1      2        2
0
## 639          639   41  39.6875   1     0     5      3        2
0
## 640          640   28     16.1   0     1     0      3        2
0
## 641          641   20   7.8542   0     0     0      3        2
0
## 642          642   24     69.3   1     0     0      1        0
1
## 643          643    2     27.9   1     3     2      3        2
0
## 644          644   28  56.4958   0     0     0      3        2
1
## 645          645 0.75  19.2583   1     2     1      3        0
1
## 646          646   48  76.7292   0     1     0      1        0
1
## 647          647   19   7.8958   0     0     0      3        2
0
## 648          648   56     35.5   0     0     0      1        0
1
## 649          649   28     7.55   0     0     0      3        2
0
## 650          650   23     7.55   1     0     0      3        2
1
## 651          651   28   7.8958   0     0     0      3        2
```

```
0
## 652          652   18       23   1     0     1      2        2
1
## 653          653   21   8.4333   0     0     0      3        2
0
## 654          654   28   7.8292   1     0     0      3        1
1
## 655          655   18     6.75   1     0     0      3        1
0
## 656          656   24     73.5   0     2     0      2        2
0
## 657          657   28   7.8958   0     0     0      3        2
0
## 658          658   32     15.5   1     1     1      3        1
0
## 659          659   23       13   0     0     0      2        2
0
## 660          660   58  113.275   0     0     2      1        0
0
## 661          661   50   133.65   0     2     0      1        2
1
## 662          662   40    7.225   0     0     0      3        0
0
## 663          663   47  25.5875   0     0     0      1        2
0
## 664          664   36   7.4958   0     0     0      3        2
0
## 665          665   20    7.925   0     1     0      3        2
1
## 666          666   32     73.5   0     2     0      2        2
0
## 667          667   25       13   0     0     0      2        2
0
## 668          668   28    7.775   0     0     0      3        2
0
## 669          669   43     8.05   0     0     0      3        2
0
## 670          670   28       52   1     1     0      1        2
1
## 671          671   40       39   1     1     1      2        2
1
## 672          672   31       52   0     1     0      1        2
0
## 673          673   70     10.5   0     0     0      2        2
0
## 674          674   31       13   0     0     0      2        2
1
## 675          675   28        0   0     0     0      2        2
0
## 676          676   18    7.775   0     0     0      3        2
```

```
0
## 677          677 24.5     8.05   0     0     0      3        2
0
## 678          678   18   9.8417   1     0     0      3        2
1
## 679          679   43     46.9   1     1     6      3        2
0
## 680          680   36 512.3292   0     0     1      1        0
1
## 681          681   28   8.1375   1     0     0      3        1
0
## 682          682   27  76.7292   0     0     0      1        0
1
## 683          683   20    9.225   0     0     0      3        2
0
## 684          684   14     46.9   0     5     2      3        2
0
## 685          685   60       39   0     1     1      2        2
0
## 686          686   25  41.5792   0     1     2      2        0
0
## 687          687   14  39.6875   0     4     1      3        2
0
## 688          688   19  10.1708   0     0     0      3        2
0
## 689          689   18   7.7958   0     0     0      3        2
0
## 690          690   15 211.3375   1     0     1      1        2
1
## 691          691   31       57   0     1     0      1        2
1
## 692          692    4  13.4167   1     0     1      3        0
1
## 693          693   28  56.4958   0     0     0      3        2
1
## 694          694   25    7.225   0     0     0      3        0
0
## 695          695   60    26.55   0     0     0      1        2
0
## 696          696   52     13.5   0     0     0      2        2
0
## 697          697   44     8.05   0     0     0      3        2
0
## 698          698   28   7.7333   1     0     0      3        1
1
## 699          699   49 110.8833   0     1     1      1        0
0
## 700          700   42     7.65   0     0     0      3        2
0
## 701          701   18  227.525   1     1     0      1        0
```

```
1
## 702          702   35  26.2875   0     0     0      1        2
1
## 703          703   18  14.4542   1     0     1      3        0
0
## 704          704   25   7.7417   0     0     0      3        1
0
## 705          705   26   7.8542   0     1     0      3        2
0
## 706          706   39       26   0     0     0      2        2
0
## 707          707   45     13.5   1     0     0      2        2
1
## 708          708   42  26.2875   0     0     0      1        2
1
## 709          709   22   151.55   1     0     0      1        2
1
## 710          710   28  15.2458   0     1     1      3        0
1
## 711          711   24  49.5042   1     0     0      1        0
1
## 712          712   28    26.55   0     0     0      1        2
0
## 713          713   48       52   0     1     0      1        2
1
## 714          714   29   9.4833   0     0     0      3        2
0
## 715          715   52       13   0     0     0      2        2
0
## 716          716   19     7.65   0     0     0      3        2
0
## 717          717   38  227.525   1     0     0      1        0
1
## 718          718   27     10.5   1     0     0      2        2
1
## 719          719   28     15.5   0     0     0      3        1
0
## 720          720   33    7.775   0     0     0      3        2
0
## 721          721    6       33   1     0     1      2        2
1
## 722          722   17   7.0542   0     1     0      3        2
0
## 723          723   34       13   0     0     0      2        2
0
## 724          724   50       13   0     0     0      2        2
0
## 725          725   27     53.1   0     1     0      1        2
1
## 726          726   20   8.6625   0     0     0      3        2
```

```
0
## 727          727   30       21   1     3     0      2         2
1
## 728          728   28   7.7375   1     0     0      3         1
1
## 729          729   25       26   0     1     0      2         2
0
## 730          730   25    7.925   1     1     0      3         2
0
## 731          731   29 211.3375   1     0     0      1         2
1
## 732          732   11  18.7875   0     0     0      3         0
0
## 733          733   28        0   0     0     0      2         2
0
## 734          734   23       13   0     0     0      2         2
0
## 735          735   23       13   0     0     0      2         2
0
## 736          736 28.5     16.1   0     0     0      3         2
0
## 737          737   48   34.375   1     1     3      3         2
0
## 738          738   35 512.3292   0     0     0      1         0
1
## 739          739   28   7.8958   0     0     0      3         2
0
## 740          740   28   7.8958   0     0     0      3         2
0
## 741          741   28       30   0     0     0      1         2
1
## 742          742   36    78.85   0     1     0      1         2
0
## 743          743   21  262.375   1     2     2      1         0
1
## 744          744   24     16.1   0     1     0      3         2
0
## 745          745   31    7.925   0     0     0      3         2
1
## 746          746   70       71   0     1     1      1         2
0
## 747          747   16    20.25   0     1     1      3         2
0
## 748          748   30       13   1     0     0      2         2
1
## 749          749   19     53.1   0     1     0      1         2
0
## 750          750   31     7.75   0     0     0      3         1
0
## 751          751    4       23   1     1     1      2         2
```

```
1
## 752          752    6   12.475   0     0     1      3        2
1
## 753          753   33      9.5   0     0     0      3        2
0
## 754          754   23   7.8958   0     0     0      3        2
0
## 755          755   48       65   1     1     2      2        2
1
## 756          756 0.67     14.5   0     1     1      2        2
1
## 757          757   28   7.7958   0     0     0      3        2
0
## 758          758   18     11.5   0     0     0      2        2
0
## 759          759   34     8.05   0     0     0      3        2
0
## 760          760   33     86.5   1     0     0      1        2
1
## 761          761   28     14.5   0     0     0      3        2
0
## 762          762   41    7.125   0     0     0      3        2
0
## 763          763   20   7.2292   0     0     0      3        0
1
## 764          764   36      120   1     1     2      1        2
1
## 765          765   16    7.775   0     0     0      3        2
0
## 766          766   51  77.9583   1     1     0      1        2
1
## 767          767   28     39.6   0     0     0      1        0
0
## 768          768 30.5     7.75   1     0     0      3        1
0
## 769          769   28    24.15   0     1     0      3        1
0
## 770          770   32   8.3625   0     0     0      3        2
0
## 771          771   24      9.5   0     0     0      3        2
0
## 772          772   48   7.8542   0     0     0      3        2
0
## 773          773   57     10.5   1     0     0      2        2
0
## 774          774   28    7.225   0     0     0      3        0
0
## 775          775   54       23   1     1     3      2        2
1
## 776          776   18     7.75   0     0     0      3        2
```

```
0
## 777          777   28     7.75   0     0     0      3        1
0
## 778          778    5   12.475   1     0     0      3        2
1
## 779          779   28   7.7375   0     0     0      3        1
0
## 780          780   43 211.3375   1     0     1      1        2
1
## 781          781   13   7.2292   1     0     0      3        0
1
## 782          782   17       57   1     1     0      1        2
1
## 783          783   29       30   0     0     0      1        2
0
## 784          784   28    23.45   0     1     2      3        2
0
## 785          785   25     7.05   0     0     0      3        2
0
## 786          786   25     7.25   0     0     0      3        2
0
## 787          787   18   7.4958   1     0     0      3        2
1
## 788          788    8   29.125   0     4     1      3        1
0
## 789          789    1   20.575   0     1     2      3        2
1
## 790          790   46     79.2   0     0     0      1        0
0
## 791          791   28     7.75   0     0     0      3        1
0
## 792          792   16       26   0     0     0      2        2
0
## 793          793   28    69.55   1     8     2      3        2
0
## 794          794   28  30.6958   0     0     0      1        0
0
## 795          795   25   7.8958   0     0     0      3        2
0
## 796          796   39       13   0     0     0      2        2
0
## 797          797   49  25.9292   1     0     0      1        2
1
## 798          798   31   8.6833   1     0     0      3        2
1
## 799          799   30   7.2292   0     0     0      3        0
0
## 800          800   30    24.15   1     1     1      3        2
0
## 801          801   34       13   0     0     0      2        2
```

```
## 802          802   31    26.25   1     1     1      2        2
1
## 803          803   11      120   0     1     2      1        2
1
## 804          804 0.42   8.5167   0     0     1      3        0
1
## 805          805   27    6.975   0     0     0      3        2
1
## 806          806   31    7.775   0     0     0      3        2
0
## 807          807   39        0   0     0     0      1        2
0
## 808          808   18    7.775   1     0     0      3        2
0
## 809          809   39       13   0     0     0      2        2
0
## 810          810   33     53.1   1     1     0      1        2
1
## 811          811   26   7.8875   0     0     0      3        2
0
## 812          812   39    24.15   0     0     0      3        2
0
## 813          813   35     10.5   0     0     0      2        2
0
## 814          814    6   31.275   1     4     2      3        2
0
## 815          815 30.5     8.05   0     0     0      3        2
0
## 816          816   28        0   0     0     0      1        2
0
## 817          817   23    7.925   1     0     0      3        2
0
## 818          818   31  37.0042   0     1     1      2        0
0
## 819          819   43     6.45   0     0     0      3        2
0
## 820          820   10     27.9   0     3     2      3        2
0
## 821          821   52     93.5   1     1     1      1        2
1
## 822          822   27   8.6625   0     0     0      3        2
1
## 823          823   38        0   0     0     0      1        2
0
## 824          824   27   12.475   1     0     1      3        2
1
## 825          825    2  39.6875   0     4     1      3        2
0
## 826          826   28     6.95   0     0     0      3        1
```

```
0
## 827          827   28  56.4958   0     0     0      3        2
0
## 828          828    1  37.0042   0     0     2      2        0
1
## 829          829   28     7.75   0     0     0      3        1
1
## 830          830   62       80   1     0     0      1       NA
1
## 831          831   15  14.4542   1     1     0      3        0
1
## 832          832 0.83    18.75   0     1     1      2        2
1
## 833          833   28   7.2292   0     0     0      3        0
0
## 834          834   23   7.8542   0     0     0      3        2
0
## 835          835   18      8.3   0     0     0      3        2
0
## 836          836   39  83.1583   1     1     1      1        0
1
## 837          837   21   8.6625   0     0     0      3        2
0
## 838          838   28     8.05   0     0     0      3        2
0
## 839          839   32  56.4958   0     0     0      3        2
1
## 840          840   28     29.7   0     0     0      1        0
1
## 841          841   20    7.925   0     0     0      3        2
0
## 842          842   16     10.5   0     0     0      2        2
0
## 843          843   30       31   1     0     0      1        0
1
## 844          844 34.5   6.4375   0     0     0      3        0
0
## 845          845   17   8.6625   0     0     0      3        2
0
## 846          846   42     7.55   0     0     0      3        2
0
## 847          847   28    69.55   0     8     2      3        2
0
## 848          848   35   7.8958   0     0     0      3        0
0
## 849          849   28       33   0     0     1      2        2
0
## 850          850   28  89.1042   1     1     0      1        0
1
## 851          851    4   31.275   0     4     2      3        2
```

```
0
## 852          852   74    7.775   0     0     0      3        2
0
## 853          853    9  15.2458   1     1     1      3        0
0
## 854          854   16     39.4   1     0     1      1        2
1
## 855          855   44       26   1     1     0      2        2
0
## 856          856   18     9.35   1     0     1      3        2
1
## 857          857   45 164.8667   1     1     1      1        2
1
## 858          858   51    26.55   0     0     0      1        2
1
## 859          859   24  19.2583   1     0     3      3        0
1
## 860          860   28   7.2292   0     0     0      3        0
0
## 861          861   41  14.1083   0     2     0      3        2
0
## 862          862   21     11.5   0     1     0      2        2
0
## 863          863   48  25.9292   1     0     0      1        2
1
## 864          864   28    69.55   1     8     2      3        2
0
## 865          865   24       13   0     0     0      2        2
0
## 866          866   42       13   1     0     0      2        2
1
## 867          867   27  13.8583   1     1     0      2        0
1
## 868          868   31  50.4958   0     0     0      1        2
0
## 869          869   28      9.5   0     0     0      3        2
0
## 870          870    4  11.1333   0     1     1      3        2
1
## 871          871   26   7.8958   0     0     0      3        2
0
## 872          872   47  52.5542   1     1     1      1        2
1
## 873          873   33        5   0     0     0      1        2
0
## 874          874   47        9   0     0     0      3        2
0
## 875          875   28       24   1     1     0      2        0
1
## 876          876   15    7.225   1     0     0      3        0
```

```
1
## 877          877   20   9.8458   0     0     0      3        2
0
## 878          878   19   7.8958   0     0     0      3        2
0
## 879          879   28   7.8958   0     0     0      3        2
0
## 880          880   56  83.1583   1     0     1      1        0
1
## 881          881   25       26   1     0     1      2        2
1
## 882          882   33   7.8958   0     0     0      3        2
0
## 883          883   22  10.5167   1     0     0      3        2
0
## 884          884   28     10.5   0     0     0      2        2
0
## 885          885   25     7.05   0     0     0      3        2
0
## 886          886   39   29.125   1     0     5      3        1
0
## 887          887   27       13   0     0     0      2        2
0
## 888          888   19       30   1     0     0      1        2
1
## 889          889   28    23.45   1     1     2      3        2
0
## 890          890   26       30   0     0     0      1        0
1
## 891          891   32     7.75   0     0     0      3        1
0
## 892          892 34.5   7.8292   0     0     0      3        1
0
## 893          893   47        7   1     1     0      3        2
0
## 894          894   62   9.6875   0     0     0      2        1
0
## 895          895   27   8.6625   0     0     0      3        2
0
## 896          896   22  12.2875   1     1     1      3        2
0
## 897          897   14    9.225   0     0     0      3        2
0
## 898          898   30   7.6292   1     0     0      3        1
0
## 899          899   26       29   0     1     1      2        2
0
## 900          900   18   7.2292   1     0     0      3        0
0
## 901          901   21    24.15   0     2     0      3        2
```

```
0
## 902          902   28   7.8958   0     0     0      3        2
0
## 903          903   46       26   0     0     0      1        2
0
## 904          904   23  82.2667   1     1     0      1        2
0
## 905          905   63       26   0     1     0      2        2
0
## 906          906   47   61.175   1     1     0      1        2
0
## 907          907   24  27.7208   1     1     0      2        0
0
## 908          908   35    12.35   0     0     0      2        1
0
## 909          909   21    7.225   0     0     0      3        0
0
## 910          910   27    7.925   1     1     0      3        2
0
## 911          911   45    7.225   1     0     0      3        0
0
## 912          912   55     59.4   0     1     0      1        0
0
## 913          913    9   3.1708   0     0     1      3        2
0
## 914          914   28  31.6833   1     0     0      1        2
0
## 915          915   21  61.3792   0     0     1      1        0
0
## 916          916   48  262.375   1     1     3      1        0
0
## 917          917   50     14.5   0     1     0      3        2
0
## 918          918   22  61.9792   1     0     1      1        0
0
## 919          919 22.5    7.225   0     0     0      3        0
0
## 920          920   41     30.5   0     0     0      1        2
0
## 921          921   28  21.6792   0     2     0      3        0
0
## 922          922   50       26   0     1     0      2        2
0
## 923          923   24     31.5   0     2     0      2        2
0
## 924          924   33   20.575   1     1     2      3        2
0
## 925          925   28    23.45   1     1     2      3        2
0
## 926          926   30    57.75   0     1     0      1        0
```

```
0
## 927          927 18.5   7.2292   0     0     0      3        0
0
## 928          928   28     8.05   1     0     0      3        2
0
## 929          929   21   8.6625   1     0     0      3        2
0
## 930          930   25      9.5   0     0     0      3        2
0
## 931          931   28  56.4958   0     0     0      3        2
0
## 932          932   39  13.4167   0     0     1      3        0
0
## 933          933   28    26.55   0     0     0      1        2
0
## 934          934   41     7.85   0     0     0      3        2
0
## 935          935   30       13   1     0     0      2        2
0
## 936          936   45  52.5542   1     1     0      1        2
0
## 937          937   25    7.925   0     0     0      3        2
0
## 938          938   45     29.7   0     0     0      1        0
0
## 939          939   28     7.75   0     0     0      3        1
0
## 940          940   60  76.2917   1     0     0      1        0
0
## 941          941   36     15.9   1     0     2      3        2
0
## 942          942   24       60   0     1     0      1        2
0
## 943          943   27  15.0333   0     0     0      2        0
0
## 944          944   20       23   1     2     1      2        2
0
## 945          945   28      263   1     3     2      1        2
0
## 946          946   28  15.5792   0     0     0      2        0
0
## 947          947   10   29.125   0     4     1      3        1
0
## 948          948   35   7.8958   0     0     0      3        2
0
## 949          949   25     7.65   0     0     0      3        2
0
## 950          950   28     16.1   0     1     0      3        2
0
## 951          951   36  262.375   1     0     0      1        0
```

```
0
## 952          952   17   7.8958   0     0     0      3        2
0
## 953          953   32     13.5   0     0     0      2        2
0
## 954          954   18     7.75   0     0     0      3        2
0
## 955          955   22    7.725   1     0     0      3        1
0
## 956          956   13  262.375   0     2     2      1        0
0
## 957          957   28       21   1     0     0      2        2
0
## 958          958   18   7.8792   1     0     0      3        1
0
## 959          959   47     42.4   0     0     0      1        2
0
## 960          960   31  28.5375   0     0     0      1        0
0
## 961          961   60      263   1     1     4      1        2
0
## 962          962   24     7.75   1     0     0      3        1
0
## 963          963   21   7.8958   0     0     0      3        2
0
## 964          964   29    7.925   1     0     0      3        2
0
## 965          965 28.5  27.7208   0     0     0      1        0
0
## 966          966   35    211.5   1     0     0      1        0
0
## 967          967 32.5    211.5   0     0     0      1        0
0
## 968          968   28     8.05   0     0     0      3        2
0
## 969          969   55     25.7   1     2     0      1        2
0
## 970          970   30       13   0     0     0      2        2
0
## 971          971   24     7.75   1     0     0      3        1
0
## 972          972    6  15.2458   0     1     1      3        0
0
## 973          973   67 221.7792   0     1     0      1        2
0
## 974          974   49       26   0     0     0      1        2
0
## 975          975   28   7.8958   0     0     0      3        2
0
## 976          976   28  10.7083   0     0     0      2        1
```

```
0
## 977          977   28  14.4542   0     1     0      3        0
0
## 978          978   27   7.8792   1     0     0      3        1
0
## 979          979   18     8.05   1     0     0      3        2
0
## 980          980   28     7.75   1     0     0      3        1
0
## 981          981    2       23   0     1     1      2        2
0
## 982          982   22     13.9   1     1     0      3        2
0
## 983          983   28    7.775   0     0     0      3        2
0
## 984          984   27       52   1     1     2      1        2
0
## 985          985   28     8.05   0     0     0      3        2
0
## 986          986   25       26   0     0     0      1        0
0
## 987          987   25   7.7958   0     0     0      3        2
0
## 988          988   76    78.85   1     1     0      1        2
0
## 989          989   29    7.925   0     0     0      3        2
0
## 990          990   20   7.8542   1     0     0      3        2
0
## 991          991   33     8.05   0     0     0      3        2
0
## 992          992   43  55.4417   1     1     0      1        0
0
## 993          993   27       26   0     1     0      2        2
0
## 994          994   28     7.75   0     0     0      3        1
0
## 995          995   26    7.775   0     0     0      3        2
0
## 996          996   16   8.5167   1     1     1      3        0
0
## 997          997   28   22.525   0     0     0      3        2
0
## 998          998   21   7.8208   0     0     0      3        1
0
## 999          999   28     7.75   0     0     0      3        1
0
## 1000        1000   28   8.7125   0     0     0      3        2
0
## 1001        1001 18.5       13   0     0     0      2        2
```

```
0
## 1002        1002   41  15.0458   0     0     0      2        0
0
## 1003        1003   28   7.7792   1     0     0      3        1
0
## 1004        1004   36  31.6792   1     0     0      1        0
0
## 1005        1005 18.5   7.2833   1     0     0      3        1
0
## 1006        1006   63 221.7792   1     1     0      1        2
0
## 1007        1007   18  14.4542   0     1     0      3        0
0
## 1008        1008   28   6.4375   0     0     0      3        0
0
## 1009        1009    1     16.7   1     1     1      3        2
0
## 1010        1010   36  75.2417   0     0     0      1        0
0
## 1011        1011   29       26   1     1     0      2        2
0
## 1012        1012   12    15.75   1     0     0      2        2
0
## 1013        1013   28     7.75   0     1     0      3        1
0
## 1014        1014   35    57.75   1     1     0      1        0
0
## 1015        1015   28     7.25   0     0     0      3        2
0
## 1016        1016   28     7.75   0     0     0      3        1
0
## 1017        1017   17     16.1   1     0     1      3        2
0
## 1018        1018   22   7.7958   0     0     0      3        2
0
## 1019        1019   28    23.25   1     2     0      3        1
0
## 1020        1020   42       13   0     0     0      2        2
0
## 1021        1021   24     8.05   0     0     0      3        2
0
## 1022        1022   32     8.05   0     0     0      3        2
0
## 1023        1023   53     28.5   0     0     0      1        0
0
## 1024        1024   28  25.4667   1     0     4      3        2
0
## 1025        1025   28   6.4375   0     1     0      3        0
0
## 1026        1026   43   7.8958   0     0     0      3        2
```

```
0
## 1027        1027   24   7.8542   0     0     0      3        2
0
## 1028        1028 26.5    7.225   0     0     0      3        0
0
## 1029        1029   26       13   0     0     0      2        2
0
## 1030        1030   23     8.05   1     0     0      3        2
0
## 1031        1031   40     46.9   0     1     6      3        2
0
## 1032        1032   10     46.9   1     5     2      3        2
0
## 1033        1033   33   151.55   1     0     0      1        2
0
## 1034        1034   61  262.375   0     1     3      1        0
0
## 1035        1035   28       26   0     0     0      2        2
0
## 1036        1036   42    26.55   0     0     0      1        2
0
## 1037        1037   31       18   0     3     0      3        2
0
## 1038        1038   28  51.8625   0     0     0      1        2
0
## 1039        1039   22     8.05   0     0     0      3        2
0
## 1040        1040   28    26.55   0     0     0      1        2
0
## 1041        1041   30       26   0     1     1      2        2
0
## 1042        1042   23  83.1583   1     0     1      1        0
0
## 1043        1043   28   7.8958   0     0     0      3        0
0
## 1044        1044 60.5  14.4542   0     0     0      3        2
0
## 1045        1045   36  12.1833   1     0     2      3        2
0
## 1046        1046   13  31.3875   0     4     2      3        2
0
## 1047        1047   24     7.55   0     0     0      3        2
0
## 1048        1048   29 221.7792   1     0     0      1        2
0
## 1049        1049   23   7.8542   1     0     0      3        2
0
## 1050        1050   42    26.55   0     0     0      1        2
0
## 1051        1051   26   13.775   1     0     2      3        2
```

```
0
## 1052        1052   28   7.7333   1     0     0      3        1
0
## 1053        1053    7  15.2458   0     1     1      3        0
0
## 1054        1054   26     13.5   1     0     0      2        2
0
## 1055        1055   28        7   0     0     0      3        2
0
## 1056        1056   41       13   0     0     0      2        2
0
## 1057        1057   26   22.025   1     1     1      3        2
0
## 1058        1058   48  50.4958   0     0     0      1        0
0
## 1059        1059   18   34.375   0     2     2      3        2
0
## 1060        1060   28  27.7208   1     0     0      1        0
0
## 1061        1061   22   8.9625   1     0     0      3        2
0
## 1062        1062   28     7.55   0     0     0      3        2
0
## 1063        1063   27    7.225   0     0     0      3        0
0
## 1064        1064   23     13.9   0     1     0      3        2
0
## 1065        1065   28   7.2292   0     0     0      3        0
0
## 1066        1066   40  31.3875   0     1     5      3        2
0
## 1067        1067   15       39   1     0     2      2        2
0
## 1068        1068   20    36.75   1     0     0      2        2
0
## 1069        1069   54  55.4417   0     1     0      1        0
0
## 1070        1070   36       39   1     0     3      2        2
0
## 1071        1071   64  83.1583   1     0     2      1        0
0
## 1072        1072   30       13   0     0     0      2        2
0
## 1073        1073   37  83.1583   0     1     1      1        0
0
## 1074        1074   18     53.1   1     1     0      1        2
0
## 1075        1075   28     7.75   0     0     0      3        1
0
## 1076        1076   27 247.5208   1     1     1      1        0
```

```
0
## 1077        1077   40       16   0     0     0      2        2
0
## 1078        1078   21       21   1     0     1      2        2
0
## 1079        1079   17     8.05   0     2     0      3        2
0
## 1080        1080   28    69.55   1     8     2      3        2
0
## 1081        1081   40       13   0     0     0      2        2
0
## 1082        1082   34       26   0     1     0      2        2
0
## 1083        1083   28       26   0     0     0      1        2
0
## 1084        1084 11.5     14.5   0     1     1      3        2
0
## 1085        1085   61    12.35   0     0     0      2        1
0
## 1086        1086    8     32.5   0     0     2      2        2
0
## 1087        1087   33   7.8542   0     0     0      3        2
0
## 1088        1088    6    134.5   0     0     2      1        0
0
## 1089        1089   18    7.775   1     0     0      3        2
0
## 1090        1090   23     10.5   0     0     0      2        2
0
## 1091        1091   28   8.1125   1     0     0      3        2
0
## 1092        1092   28     15.5   1     0     0      3        1
0
## 1093        1093 0.33     14.4   0     0     2      3        2
0
## 1094        1094   47  227.525   0     1     0      1        0
0
## 1095        1095    8       26   1     1     1      2        2
0
## 1096        1096   25     10.5   0     0     0      2        2
0
## 1097        1097   28  25.7417   0     0     0      1        0
0
## 1098        1098   35     7.75   1     0     0      3        1
0
## 1099        1099   24     10.5   0     0     0      2        2
0
## 1100        1100   33  27.7208   1     0     0      1        0
0
## 1101        1101   25   7.8958   0     0     0      3        2
```

```
0
## 1102        1102   32   22.525   0     0     0      3        2
0
## 1103        1103   28     7.05   0     0     0      3        2
0
## 1104        1104   17     73.5   0     0     0      2        2
0
## 1105        1105   60       26   1     1     0      2        2
0
## 1106        1106   38    7.775   1     4     2      3        2
0
## 1107        1107   42     42.5   0     0     0      1        2
0
## 1108        1108   28   7.8792   1     0     0      3        1
0
## 1109        1109   57 164.8667   0     1     1      1        2
0
## 1110        1110   50    211.5   1     1     1      1        0
0
## 1111        1111   28     8.05   0     0     0      3        2
0
## 1112        1112   30  13.8583   1     1     0      2        0
0
## 1113        1113   21     8.05   0     0     0      3        2
0
## 1114        1114   22     10.5   1     0     0      2        2
0
## 1115        1115   21   7.7958   0     0     0      3        2
0
## 1116        1116   53  27.4458   1     0     0      1        0
0
## 1117        1117   28  15.2458   1     0     2      3        0
0
## 1118        1118   23   7.7958   0     0     0      3        2
0
## 1119        1119   28     7.75   1     0     0      3        1
0
## 1120        1120 40.5     15.1   0     0     0      3        2
0
## 1121        1121   36       13   0     0     0      2        2
0
## 1122        1122   14       65   0     0     0      2        2
0
## 1123        1123   21    26.55   1     0     0      1        2
0
## 1124        1124   21   6.4958   0     1     0      3        2
0
## 1125        1125   28   7.8792   0     0     0      3        1
0
## 1126        1126   39  71.2833   0     1     0      1        0
```

```
0
## 1127        1127   20   7.8542   0     0     0      3        2
0
## 1128        1128   64    75.25   0     1     0      1        0
0
## 1129        1129   20    7.225   0     0     0      3        0
0
## 1130        1130   18       13   1     1     1      2        2
0
## 1131        1131   48  106.425   1     1     0      1        0
0
## 1132        1132   55  27.7208   1     0     0      1        0
0
## 1133        1133   45       30   1     0     2      2        2
0
## 1134        1134   45    134.5   0     1     1      1        0
0
## 1135        1135   28   7.8875   0     0     0      3        2
0
## 1136        1136   28    23.45   0     1     2      3        2
0
## 1137        1137   41  51.8625   0     1     0      1        2
0
## 1138        1138   22       21   1     0     0      2        2
0
## 1139        1139   42     32.5   0     1     1      2        2
0
## 1140        1140   29       26   1     1     0      2        2
0
## 1141        1141   28  14.4542   1     1     0      3        0
0
## 1142        1142 0.92    27.75   1     1     2      2        2
0
## 1143        1143   20    7.925   0     0     0      3        2
0
## 1144        1144   27 136.7792   0     1     0      1        0
0
## 1145        1145   24    9.325   0     0     0      3        2
0
## 1146        1146 32.5      9.5   0     0     0      3        2
0
## 1147        1147   28     7.55   0     0     0      3        2
0
## 1148        1148   28     7.75   0     0     0      3        1
0
## 1149        1149   28     8.05   0     0     0      3        2
0
## 1150        1150   19       13   1     0     0      2        2
0
## 1151        1151   21    7.775   0     0     0      3        2
```

```
0
## 1152        1152 36.5     17.4   0     1     0      3        2
0
## 1153        1153   21   7.8542   0     0     0      3        2
0
## 1154        1154   29       23   1     0     2      2        2
0
## 1155        1155    1  12.1833   1     1     1      3        2
0
## 1156        1156   30  12.7375   0     0     0      2        0
0
## 1157        1157   28   7.8958   0     0     0      3        2
0
## 1158        1158   28        0   0     0     0      1        2
0
## 1159        1159   28     7.55   0     0     0      3        2
0
## 1160        1160   28     8.05   1     0     0      3        2
0
## 1161        1161   17   8.6625   0     0     0      3        2
0
## 1162        1162   46  75.2417   0     0     0      1        0
0
## 1163        1163   28     7.75   0     0     0      3        1
0
## 1164        1164   26 136.7792   1     1     0      1        0
0
## 1165        1165   28     15.5   1     1     0      3        1
0
## 1166        1166   28    7.225   0     0     0      3        0
0
## 1167        1167   20       26   1     1     0      2        2
0
## 1168        1168   28     10.5   0     0     0      2        2
0
## 1169        1169   40       26   0     1     0      2        2
0
## 1170        1170   30       21   0     1     0      2        2
0
## 1171        1171   22     10.5   0     0     0      2        2
0
## 1172        1172   23   8.6625   1     0     0      3        2
0
## 1173        1173 0.75   13.775   0     1     1      3        2
0
## 1174        1174   28     7.75   1     0     0      3        1
0
## 1175        1175    9  15.2458   1     1     1      3        0
0
## 1176        1176    2  20.2125   1     1     1      3        2
```

```
0
## 1177        1177   36     7.25   0     0     0      3        2
0
## 1178        1178   28     7.25   0     0     0      3        2
0
## 1179        1179   24  82.2667   0     1     0      1        2
0
## 1180        1180   28   7.2292   0     0     0      3        0
0
## 1181        1181   28     8.05   0     0     0      3        2
0
## 1182        1182   28     39.6   0     0     0      1        2
0
## 1183        1183   30     6.95   1     0     0      3        1
0
## 1184        1184   28   7.2292   0     0     0      3        0
0
## 1185        1185   53  81.8583   0     1     1      1        2
0
## 1186        1186   36      9.5   0     0     0      3        2
0
## 1187        1187   26   7.8958   0     0     0      3        2
0
## 1188        1188    1  41.5792   1     1     2      2        0
0
## 1189        1189   28  21.6792   0     2     0      3        0
0
## 1190        1190   30     45.5   0     0     0      1        2
0
## 1191        1191   29   7.8542   0     0     0      3        2
0
## 1192        1192   32    7.775   0     0     0      3        2
0
## 1193        1193   28  15.0458   0     0     0      2        0
0
## 1194        1194   43       21   0     0     1      2        2
0
## 1195        1195   24   8.6625   0     0     0      3        2
0
## 1196        1196   28     7.75   1     0     0      3        1
0
## 1197        1197   64    26.55   1     1     1      1        2
0
## 1198        1198   30   151.55   0     1     2      1        2
0
## 1199        1199 0.83     9.35   0     0     1      3        2
0
## 1200        1200   55     93.5   0     1     1      1        2
0
## 1201        1201   45  14.1083   1     1     0      3        2
```

```
0
## 1202        1202   18   8.6625   0     0     0      3        2
0
## 1203        1203   22    7.225   0     0     0      3        0
0
## 1204        1204   28    7.575   0     0     0      3        2
0
## 1205        1205   37     7.75   1     0     0      3        1
0
## 1206        1206   55 135.6333   1     0     0      1        0
0
## 1207        1207   17   7.7333   1     0     0      3        1
0
## 1208        1208   57 146.5208   0     1     0      1        0
0
## 1209        1209   19     10.5   0     0     0      2        2
0
## 1210        1210   27   7.8542   0     0     0      3        2
0
## 1211        1211   22     31.5   0     2     0      2        2
0
## 1212        1212   26    7.775   0     0     0      3        2
0
## 1213        1213   25   7.2292   0     0     0      3        0
0
## 1214        1214   26       13   0     0     0      2        2
0
## 1215        1215   33    26.55   0     0     0      1        2
0
## 1216        1216   39 211.3375   1     0     0      1        2
0
## 1217        1217   23     7.05   0     0     0      3        2
0
## 1218        1218   12       39   1     2     1      2        2
0
## 1219        1219   46     79.2   0     0     0      1        0
0
## 1220        1220   29       26   0     1     0      2        2
0
## 1221        1221   21       13   0     0     0      2        2
0
## 1222        1222   48    36.75   1     0     2      2        2
0
## 1223        1223   39     29.7   0     0     0      1        0
0
## 1224        1224   28    7.225   0     0     0      3        0
0
## 1225        1225   19  15.7417   1     1     1      3        0
0
## 1226        1226   27   7.8958   0     0     0      3        2
```

```
0
## 1227        1227   30       26   0     0     0      1        2
0
## 1228        1228   32       13   0     0     0      2        2
0
## 1229        1229   39   7.2292   0     0     2      3        0
0
## 1230        1230   25     31.5   0     0     0      2        2
0
## 1231        1231   28   7.2292   0     0     0      3        0
0
## 1232        1232   18     10.5   0     0     0      2        2
0
## 1233        1233   32   7.5792   0     0     0      3        2
0
## 1234        1234   28    69.55   0     1     9      3        2
0
## 1235        1235   58 512.3292   1     0     1      1        0
0
## 1236        1236   28     14.5   0     1     1      3        2
0
## 1237        1237   16     7.65   1     0     0      3        2
0
## 1238        1238   26       13   0     0     0      2        2
0
## 1239        1239   38   7.2292   1     0     0      3        0
0
## 1240        1240   24     13.5   0     0     0      2        2
0
## 1241        1241   31       21   1     0     0      2        2
0
## 1242        1242   45  63.3583   1     0     1      1        0
0
## 1243        1243   25     10.5   0     0     0      2        2
0
## 1244        1244   18     73.5   0     0     0      2        2
0
## 1245        1245   49       65   0     1     2      2        2
0
## 1246        1246 0.17   20.575   1     1     2      3        2
0
## 1247        1247   50       26   0     0     0      1        2
0
## 1248        1248   59  51.4792   1     2     0      1        2
0
## 1249        1249   28   7.8792   0     0     0      3        2
0
## 1250        1250   28     7.75   0     0     0      3        1
0
## 1251        1251   30    15.55   1     1     0      3        2
```

```
0
## 1252        1252 14.5    69.55   0     8     2      3        2
0
## 1253        1253   24  37.0042   1     1     1      2        0
0
## 1254        1254   31       21   1     0     0      2        2
0
## 1255        1255   27   8.6625   0     0     0      3        2
0
## 1256        1256   25  55.4417   1     1     0      1        0
0
## 1257        1257   28    69.55   1     1     9      3        2
0
## 1258        1258   28  14.4583   0     1     0      3        0
0
## 1259        1259   22  39.6875   1     0     0      3        2
0
## 1260        1260   45     59.4   1     0     1      1        0
0
## 1261        1261   29  13.8583   0     0     0      2        0
0
## 1262        1262   21     11.5   0     1     0      2        2
0
## 1263        1263   31    134.5   1     0     0      1        0
0
## 1264        1264   49        0   0     0     0      1        2
0
## 1265        1265   44       13   0     0     0      2        2
0
## 1266        1266   54  81.8583   1     1     1      1        2
0
## 1267        1267   45  262.375   1     0     0      1        0
0
## 1268        1268   22   8.6625   1     2     0      3        2
0
## 1269        1269   21     11.5   0     0     0      2        2
0
## 1270        1270   55       50   0     0     0      1        2
0
## 1271        1271    5  31.3875   0     4     2      3        2
0
## 1272        1272   28     7.75   0     0     0      3        1
0
## 1273        1273   26   7.8792   0     0     0      3        1
0
## 1274        1274   28     14.5   1     0     0      3        2
0
## 1275        1275   19     16.1   1     1     0      3        2
0
## 1276        1276   28   12.875   0     0     0      2        2
```

```
0
## 1277        1277   24       65   1     1     2      2         2
0
## 1278        1278   24    7.775   0     0     0      3         2
0
## 1279        1279   57       13   0     0     0      2         2
0
## 1280        1280   21     7.75   0     0     0      3         1
0
## 1281        1281    6   21.075   0     3     1      3         2
0
## 1282        1282   23     93.5   0     0     0      1         2
0
## 1283        1283   51     39.4   1     0     1      1         2
0
## 1284        1284   13    20.25   0     0     2      3         2
0
## 1285        1285   47     10.5   0     0     0      2         2
0
## 1286        1286   29   22.025   0     3     1      3         2
0
## 1287        1287   18       60   1     1     0      1         2
0
## 1288        1288   24     7.25   0     0     0      3         1
0
## 1289        1289   48     79.2   1     1     1      1         0
0
## 1290        1290   22    7.775   0     0     0      3         2
0
## 1291        1291   31   7.7333   0     0     0      3         1
0
## 1292        1292   30 164.8667   1     0     0      1         2
0
## 1293        1293   38       21   0     1     0      2         2
0
## 1294        1294   22     59.4   1     0     1      1         0
0
## 1295        1295   17     47.1   0     0     0      1         2
0
## 1296        1296   43  27.7208   0     1     0      1         0
0
## 1297        1297   20  13.8625   0     0     0      2         0
0
## 1298        1298   23     10.5   0     1     0      2         2
0
## 1299        1299   50    211.5   0     1     1      1         0
0
## 1300        1300   28   7.7208   1     0     0      3         1
0
## 1301        1301    3   13.775   1     1     1      3         2
```

```
0
## 1302        1302   28     7.75   1     0     0      3        1
0
## 1303        1303   37       90   1     1     0      1        1
0
## 1304        1304   28    7.775   1     0     0      3        2
0
## 1305        1305   28     8.05   0     0     0      3        2
0
## 1306        1306   39    108.9   1     0     0      1        0
0
## 1307        1307 38.5     7.25   0     0     0      3        2
0
## 1308        1308   28     8.05   0     0     0      3        2
0
## 1309        1309   28  22.3583   0     1     1      3        0
0
```

```
summary(data)
```

```
##   Passengerid       Age                Fare                Sex
##  Min.   :   1   Length:1309        Length:1309        Min.   :0.000
##  1st Qu.: 328   Class :character   Class :character   1st Qu.:0.000
##  Median : 655   Mode  :character   Mode  :character   Median :0.000
##  Mean   : 655                                         Mean   :0.356
##  3rd Qu.: 982                                         3rd Qu.:1.000
##  Max.   :1309                                         Max.   :1.000
##
##      sibsp            Parch           Pclass         Embarked
##  Min.   :0.0000   Min.   :0.000   Min.   :1.000   Min.   :0.000
##  1st Qu.:0.0000   1st Qu.:0.000   1st Qu.:2.000   1st Qu.:1.000
##  Median :0.0000   Median :0.000   Median :3.000   Median :2.000
##  Mean   :0.4989   Mean   :0.385   Mean   :2.295   Mean   :1.493
##  3rd Qu.:1.0000   3rd Qu.:0.000   3rd Qu.:3.000   3rd Qu.:2.000
##  Max.   :8.0000   Max.   :9.000   Max.   :3.000   Max.   :2.000
##                                                   NA's   :2
##    X2urvived
##  Min.   :0.0000
##  1st Qu.:0.0000
##  Median :0.0000
##  Mean   :0.2613
##  3rd Qu.:1.0000
##  Max.   :1.0000
##
```

#Crear la funcion para determinar NA si es que existen

```
DetectarNA <-  function(data, tipo)
{
```

```
    #Determinar que columnas tienen datos faltantes
    colNA <- colnames(data)[!complete.cases(t(data))]
    # 1.2 substraer las columnas con datos faltanes
    IncompleteData <- data %>%
                      select(colNA)

    #1.3 calcular porcentaje de datos faltantes apply(datos faltantes, 1
fila o 2 columan,  funcion )

    PorcentajeNA <- as.data.frame(apply(IncompleteData,2,function(col)
sum(is.na(col))/ length(col) ))
    colnames(PorcentajeNA) <- c("Porcentaje")
    PorcentajeNA

    #Determinar columnas que si son procesables (las que cumplen con
valores abajo del 5%)

    colPros <- PorcentajeNA %>%
                    filter(PorcentajeNA <= 0.06)
    colPros

    if(tipo == 0)
    {
      return(ColumnasProcesables)
    }
    else
    {
      return(ColumnasNoProcesables)
    }
}

data2 <- data
DataImputatio <- function(data2, colname, tipo) {
  if (tipo == "media"){
    data2[,colname] <- ifelse(is.na(data2[,colname]),
                              mean(data2[,colname],na.rm=T),
                              data1[,colname])
  }
  else
  {
    data2[,colname] <- ifelse(is.na(data2[,colname]),
                              median(data2[,colname],na.rm=T),
                              data2[,colname])

  }
}
```

#Dividir datos 80% para el entrenamiento y 20% para pruebas

```r
set.seed(123)
traningsamples<- data$X2urvived %>%

                createDataPartition(p=0.8, list = FALSE)

traindata <- data[traningsamples,]
testdata <- data[-traningsamples,]
```

#Experimentacion con la variable dependiente si sobrevive tomando las variables independientes clase del ticket y sexo

```r
model <- glm(X2urvived~Pclass + Sex,data = traindata, family = binomial)
            summary(model)

##
## Call:
## glm(formula = X2urvived ~ Pclass + Sex, family = binomial, data =
traindata)
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept) -0.45045    0.21961  -2.051   0.0403 *
## Pclass      -0.64477    0.09171  -7.030 2.06e-12 ***
## Sex          1.82955    0.15818  11.566  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1206.37  on 1047  degrees of freedom
## Residual deviance:  998.55  on 1045  degrees of freedom
## AIC: 1004.6
##
## Number of Fisher Scoring iterations: 4
```

```r
  predictionValue <- model %>% predict(testdata,type = "response")
  predictionValue <- ifelse(predictionValue>=0.5,1,0)

  predictionValue <- as.factor(predictionValue)
  testdata$X2urvived <- as.factor(testdata$X2urvived)

  example <- confusionMatrix(data=predictionValue,
reference=testdata$X2urvived, mode="everything")
  example

## Confusion Matrix and Statistics
##
##           Reference
## Prediction   0   1
##          0 176  33
##          1  18  34
```

```
##
##                Accuracy : 0.8046
##                  95% CI : (0.7512, 0.8509)
##     No Information Rate : 0.7433
##     P-Value [Acc > NIR] : 0.01232
##
##                   Kappa : 0.4475
##
##  Mcnemar's Test P-Value : 0.04995
##
##             Sensitivity : 0.9072
##             Specificity : 0.5075
##          Pos Pred Value : 0.8421
##          Neg Pred Value : 0.6538
##               Precision : 0.8421
##                  Recall : 0.9072
##                      F1 : 0.8734
##              Prevalence : 0.7433
##          Detection Rate : 0.6743
##    Detection Prevalence : 0.8008
##       Balanced Accuracy : 0.7073
##
##        'Positive' Class : 0
##
```

#Experimeinto 2 tomando como variables independientes Embarked

```
model <- glm(X2urvived~Embarked,data = traindata, family = binomial)
            summary(model)

##
## Call:
## glm(formula = X2urvived ~ Embarked, family = binomial, data =
traindata)
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept) -0.62968    0.13789  -4.567 4.96e-06 ***
## Embarked    -0.27897    0.08333  -3.348 0.000815 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1203.7  on 1046  degrees of freedom
## Residual deviance: 1192.7  on 1045  degrees of freedom
##   (1 observation deleted due to missingness)
## AIC: 1196.7
##
## Number of Fisher Scoring iterations: 4
```

```
  predictionValue <- model %>% predict(testdata,type = "response")
  predictionValue <- ifelse(predictionValue>=0.5,1,0)

  predictionValue <- as.factor(predictionValue)
 testdata$X2urvived <- as.factor(testdata$X2urvived)

  example <- confusionMatrix(data=predictionValue,
reference=testdata$X2urvived, mode="everything")
```

```
## Warning in confusionMatrix.default(data = predictionValue, reference =
## testdata$X2urvived, : Levels are not in the same order for reference
and data.
## Refactoring data to match.
```

```
  example
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction   0   1
##          0 194  66
##          1   0   0
##
##                Accuracy : 0.7462
##                  95% CI : (0.6887, 0.7979)
##     No Information Rate : 0.7462
##     P-Value [Acc > NIR] : 0.533
##
##                   Kappa : 0
##
##  Mcnemar's Test P-Value : 1.235e-15
##
##             Sensitivity : 1.0000
##             Specificity : 0.0000
##          Pos Pred Value : 0.7462
##          Neg Pred Value :    NaN
##               Precision : 0.7462
##                  Recall : 1.0000
##                      F1 : 0.8546
##              Prevalence : 0.7462
##          Detection Rate : 0.7462
##    Detection Prevalence : 1.0000
##       Balanced Accuracy : 0.5000
##
##        'Positive' Class : 0
##
```

#Experimento 3 tomando como variables independientes pclass, sex, parch

```
model <- glm(X2urvived~Pclass + Sex+ Parch,data = traindata, family =
binomial)
            summary(model)

##
## Call:
## glm(formula = X2urvived ~ Pclass + Sex + Parch, family = binomial,
##     data = traindata)
##
## Coefficients:
##             Estimate Std. Error z value Pr(>|z|)
## (Intercept) -0.44809    0.21996  -2.037   0.0416 *
## Pclass      -0.64372    0.09185  -7.009 2.41e-12 ***
## Sex          1.83749    0.16237  11.317  < 2e-16 ***
## Parch       -0.01883    0.08655  -0.218   0.8278
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 1206.4  on 1047  degrees of freedom
## Residual deviance:  998.5  on 1044  degrees of freedom
## AIC: 1006.5
##
## Number of Fisher Scoring iterations: 4

predictionValue <- model %>% predict(testdata,type = "response")
  predictionValue <- ifelse(predictionValue>=0.5,1,0)

  predictionValue <- as.factor(predictionValue)
 testdata$X2urvived <- as.factor(testdata$X2urvived)

  example <- confusionMatrix(data=predictionValue,
reference=testdata$X2urvived, mode="everything")
  example

## Confusion Matrix and Statistics
##
##           Reference
## Prediction   0   1
##          0 176  33
##          1  18  34
##
##                Accuracy : 0.8046
##                  95% CI : (0.7512, 0.8509)
##     No Information Rate : 0.7433
##     P-Value [Acc > NIR] : 0.01232
##
##                   Kappa : 0.4475
##
```

```
##  Mcnemar's Test P-Value : 0.04995
##
##             Sensitivity : 0.9072
##             Specificity : 0.5075
##          Pos Pred Value : 0.8421
##          Neg Pred Value : 0.6538
##               Precision : 0.8421
##                  Recall : 0.9072
##                      F1 : 0.8734
##              Prevalence : 0.7433
##          Detection Rate : 0.6743
##    Detection Prevalence : 0.8008
##       Balanced Accuracy : 0.7073
##
##        'Positive' Class : 0
##
```