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 0  
## 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  
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## 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  
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## 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  
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## 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  
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## 347 347 40 13 1 0 0 2 2 1  
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## 353 353 15 7.2292 0 1 1 3 0 0  
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## 355 355 28 7.225 0 0 0 3 0 0  
## 356 356 28 9.5 0 0 0 3 2 0  
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## 365 365 28 15.5 0 1 0 3 1 0  
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## 368 368 28 7.2292 1 0 0 3 0 1  
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## 370 370 24 69.3 1 0 0 1 0 1  
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## 377 377 22 7.25 1 0 0 3 2 1  
## 378 378 27 211.5 0 0 2 1 0 0  
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## 382 382 1 15.7417 1 0 2 3 0 1  
## 383 383 32 7.925 0 0 0 3 2 0  
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## 389 389 28 7.7292 0 0 0 3 1 0  
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## 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  
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## 399 399 23 10.5 0 0 0 2 2 0  
## 400 400 28 12.65 1 0 0 2 2 1  
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## 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 0  
## 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  
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## 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

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

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

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   
##