

Analisis Exploratorio Ejercicio1

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2022-08-22

Ejercicio 1: Caracteres manuscritos

```
library(ggplot2)
library(dplyr)
library(tidyverse)

# Read the dataset
db<-read.csv('train.csv')
summary(db)
```

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##      label      pixel0      pixel1      pixel2      pixel3      pixel4
## Min.   :0.000   Min.   :0   Min.   :0   Min.   :0   Min.   :0   Min.   :0
## 1st Qu.:2.000   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0
## Median :4.000   Median :0   Median :0   Median :0   Median :0   Median :0
## Mean   :4.457   Mean   :0   Mean   :0   Mean   :0   Mean   :0   Mean   :0
## 3rd Qu.:7.000   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0
## Max.   :9.000   Max.   :0   Max.   :0   Max.   :0   Max.   :0   Max.   :0
##      pixel5      pixel6      pixel7      pixel8      pixel9      pixel10
## Min.   :0   Min.   :0   Min.   :0   Min.   :0   Min.   :0   Min.   :0
## 1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0
## Median :0   Median :0   Median :0   Median :0   Median :0   Median :0
## Mean   :0   Mean   :0   Mean   :0   Mean   :0   Mean   :0   Mean   :0
## 3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0
## Max.   :0   Max.   :0   Max.   :0   Max.   :0   Max.   :0   Max.   :0
##      pixel11      pixel12      pixel13      pixel14
## Min.   :0   Min.   : 0.000   Min.   : 0.00000   Min.   :0.00e+00
## 1st Qu.:0   1st Qu.: 0.000   1st Qu.: 0.00000   1st Qu.:0.00e+00
## Median :0   Median : 0.000   Median : 0.00000   Median :0.00e+00
## Mean   :0   Mean   : 0.003   Mean   : 0.01119   Mean   :5.14e-03
## 3rd Qu.:0   3rd Qu.: 0.000   3rd Qu.: 0.00000   3rd Qu.:0.00e+00
## Max.   :0   Max.   :116.000   Max.   :254.00000   Max.   :2.16e+02
##      pixel15      pixel16      pixel17      pixel18      pixel19      pixel20
## Min.   :0.000000   Min.   :0   Min.   :0   Min.   :0   Min.   :0   Min.   :0
## 1st Qu.:0.000000   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0
## Median :0.000000   Median :0   Median :0   Median :0   Median :0   Median :0
## Mean   :0.000214   Mean   :0   Mean   :0   Mean   :0   Mean   :0   Mean   :0
## 3rd Qu.:0.000000   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0
## Max.   :9.000000   Max.   :0   Max.   :0   Max.   :0   Max.   :0   Max.   :0
##      pixel21      pixel22      pixel23      pixel24      pixel25      pixel26
## Min.   :0   Min.   :0   Min.   :0   Min.   :0   Min.   :0   Min.   :0
## 1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0
## Median :0   Median :0   Median :0   Median :0   Median :0   Median :0
## Mean   :0   Mean   :0   Mean   :0   Mean   :0   Mean   :0   Mean   :0
## 3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0
## Max.   :0   Max.   :0   Max.   :0   Max.   :0   Max.   :0   Max.   :0
##      pixel27      pixel28      pixel29      pixel30      pixel31      pixel32
## Min.   :0   Min.   :0   Min.   :0   Min.   :0   Min.   :0   Min.   :0.00e+00
## 1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0   1st Qu.:0.00e+00
## Median :0   Median :0   Median :0   Median :0   Median :0   Median :0.00e+00
## Mean   :0   Mean   :0   Mean   :0   Mean   :0   Mean   :0   Mean   :3.81e-04
## 3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0   3rd Qu.:0.00e+00
## Max.   :0   Max.   :0   Max.   :0   Max.   :0   Max.   :0   Max.   :1.60e+01
##      pixel33      pixel34      pixel35      pixel36
## Min.   : 0.00000   Min.   : 0.00000   Min.   : 0.00000   Min.   : 0.0000
## 1st Qu.: 0.00000   1st Qu.: 0.00000   1st Qu.: 0.00000   1st Qu.: 0.0000
## Median : 0.00000   Median : 0.00000   Median : 0.00000   Median : 0.0000
## Mean   : 0.00131   Mean   : 0.01055   Mean   : 0.02726   Mean   : 0.0509
## 3rd Qu.: 0.00000   3rd Qu.: 0.00000   3rd Qu.: 0.00000   3rd Qu.: 0.0000
## Max.   :47.00000   Max.   :157.00000   Max.   :254.00000   Max.   :255.0000
##      pixel37      pixel38      pixel39      pixel40
## Min.   : 0.0000   Min.   : 0.0000   Min.   : 0.0000   Min.   : 0.0000
## 1st Qu.: 0.0000   1st Qu.: 0.0000   1st Qu.: 0.0000   1st Qu.: 0.0000

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## Median : 0.0000 Median : 0.0000 Median : 0.0000 Median : 0.0000
## Mean : 0.0664 Mean : 0.1296 Mean : 0.1741 Mean : 0.1913
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :243.0000 Max. :255.0000 Max. :255.0000 Max. :255.0000
## pixel41 pixel42 pixel43 pixel44
## Min. : 0.0000 Min. : 0.0000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.0000 Median : 0.0000 Median : 0.0000 Median : 0.0000
## Mean : 0.1906 Mean : 0.1961 Mean : 0.1714 Mean : 0.1645
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :255.0000 Max. :255.0000 Max. :255.0000 Max. :255.0000
## pixel45 pixel46 pixel47 pixel48
## Min. : 0.0000 Min. : 0.0000 Min. : 0.00000 Min. : 0.00000
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.00000
## Median : 0.0000 Median : 0.0000 Median : 0.00000 Median : 0.00000
## Mean : 0.1517 Mean : 0.1053 Mean : 0.06079 Mean : 0.04507
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.00000
## Max. :255.0000 Max. :255.0000 Max. :255.00000 Max. :244.00000
## pixel49 pixel50 pixel51 pixel52
## Min. : 0.0000 Min. : 0.00000 Min. :0.00e+00 Min. :0
## 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.:0.00e+00 1st Qu.:0
## Median : 0.0000 Median : 0.00000 Median :0.00e+00 Median :0
## Mean : 0.0154 Mean : 0.01052 Mean :5.05e-03 Mean :0
## 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.:0.00e+00 3rd Qu.:0
## Max. :255.0000 Max. :184.00000 Max. :1.97e+02 Max. :0
## pixel53 pixel54 pixel55 pixel56 pixel57 pixel58
## Min. :0 Min. :0 Min. :0 Min. :0 Min. :0 Min. : 0.00000
## 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.: 0.00000
## Median :0 Median :0 Median :0 Median :0 Median :0 Median : 0.00000
## Mean :0 Mean :0 Mean :0 Mean :0 Mean :0 Mean : 0.00152
## 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.: 0.00000
## Max. :0 Max. :0 Max. :0 Max. :0 Max. :0 Max. :64.00000
## pixel59 pixel60 pixel61 pixel62
## Min. :0.0e+00 Min. :0.00e+00 Min. :0.00e+00 Min. : 0.00000
## 1st Qu.:0.0e+00 1st Qu.:0.00e+00 1st Qu.:0.00e+00 1st Qu.: 0.00000
## Median :0.0e+00 Median :0.00e+00 Median :0.00e+00 Median : 0.00000
## Mean :6.9e-04 Mean :7.33e-03 Mean :9.02e-03 Mean : 0.06112
## 3rd Qu.:0.0e+00 3rd Qu.:0.00e+00 3rd Qu.:0.00e+00 3rd Qu.: 0.00000
## Max. :2.9e+01 Max. :1.34e+02 Max. :1.28e+02 Max. :234.00000
## pixel63 pixel64 pixel65 pixel66
## Min. : 0.0000 Min. : 0.0000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.0000 Median : 0.0000 Median : 0.0000 Median : 0.0000
## Mean : 0.1511 Mean : 0.2959 Mean : 0.5337 Mean : 0.8694
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :255.0000 Max. :255.0000 Max. :255.0000 Max. :255.0000
## pixel67 pixel68 pixel69 pixel70
## Min. : 0.000 Min. : 0.000 Min. : 0.000 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.000 Median : 0.00
## Mean : 1.346 Mean : 1.981 Mean : 2.699 Mean : 3.39
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00

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## Max. :255.000 Max. :255.000 Max. :255.000 Max. :255.00
## pixel71 pixel72 pixel73 pixel74
## Min. : 0.000 Min. : 0.00 Min. : 0.000 Min. : 0.000
## 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.000 Median : 0.00 Median : 0.000 Median : 0.000
## Mean : 3.802 Mean : 3.74 Mean : 3.333 Mean : 2.684
## 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.000 Max. :255.00 Max. :255.000 Max. :255.000
## pixel75 pixel76 pixel77 pixel78
## Min. : 0.000 Min. : 0.000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.000 Median : 0.000 Median : 0.0000 Median : 0.0000
## Mean : 1.993 Mean : 1.196 Mean : 0.6012 Mean : 0.2938
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :255.000 Max. :255.000 Max. :255.0000 Max. :255.0000
## pixel79 pixel80 pixel81 pixel82
## Min. : 0.00000 Min. : 0.00000 Min. : 0.0000 Min. : 0
## 1st Qu.: 0.00000 1st Qu.: 0.00000 1st Qu.: 0.0000 1st Qu.: 0
## Median : 0.00000 Median : 0.00000 Median : 0.0000 Median : 0
## Mean : 0.09848 Mean : 0.03495 Mean : 0.0084 Mean : 0
## 3rd Qu.: 0.00000 3rd Qu.: 0.00000 3rd Qu.: 0.0000 3rd Qu.: 0
## Max. :255.00000 Max. :255.00000 Max. :165.0000 Max. : 0
## pixel83 pixel84 pixel85 pixel86 pixel87
## Min. :0 Min. :0 Min. :0 Min. :0.00e+00 Min. : 0.00000
## 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.:0.00e+00 1st Qu.: 0.00000
## Median :0 Median :0 Median :0 Median :0.00e+00 Median : 0.00000
## Mean :0 Mean :0 Mean :0 Mean :3.62e-03 Mean : 0.00417
## 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0.00e+00 3rd Qu.: 0.00000
## Max. :0 Max. :0 Max. :0 Max. :1.41e+02 Max. :84.00000
## pixel88 pixel89 pixel90 pixel91
## Min. : 0.0000 Min. : 0.00000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.0000 Median : 0.00000 Median : 0.0000 Median : 0.0000
## Mean : 0.0164 Mean : 0.08976 Mean : 0.2358 Mean : 0.5407
## 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :139.0000 Max. :255.00000 Max. :255.0000 Max. :255.0000
## pixel92 pixel93 pixel94 pixel95
## Min. : 0.000 Min. : 0.000 Min. : 0.000 Min. : 0.000
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.000 Median : 0.000 Median : 0.000 Median : 0.000
## Mean : 1.193 Mean : 2.293 Mean : 3.768 Mean : 5.714
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.000 Max. :255.000 Max. :255.000 Max. :255.000
## pixel96 pixel97 pixel98 pixel99
## Min. : 0.000 Min. : 0.00 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0
## Median : 0.000 Median : 0.00 Median : 0.00 Median : 0.0
## Mean : 7.751 Mean : 10.05 Mean : 12.07 Mean : 13.4
## 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.0
## Max. :255.000 Max. :255.00 Max. :255.00 Max. :255.0
## pixel100 pixel101 pixel102 pixel103
## Min. : 0.00 Min. : 0.00 Min. : 0.000 Min. : 0.000

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## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.00 Median : 0.00 Median : 0.000 Median : 0.000
## Mean : 13.07 Mean : 11.57 Mean : 9.296 Mean : 6.708
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.00 Max. :255.00 Max. :255.000 Max. :255.000
## pixel104 pixel105 pixel106 pixel107
## Min. : 0.00 Min. : 0.00 Min. : 0.000 Min. : 0.0000
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.0000
## Median : 0.00 Median : 0.00 Median : 0.000 Median : 0.0000
## Mean : 4.14 Mean : 2.27 Mean : 1.092 Mean : 0.4246
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.0000
## Max. :255.00 Max. :255.00 Max. :255.000 Max. :255.0000
## pixel108 pixel109 pixel110 pixel111
## Min. : 0.000 Min. : 0.00000 Min. :0.00e+00 Min. :0
## 1st Qu.: 0.000 1st Qu.: 0.00000 1st Qu.:0.00e+00 1st Qu.:0
## Median : 0.000 Median : 0.00000 Median :0.00e+00 Median :0
## Mean : 0.168 Mean : 0.02374 Mean :2.88e-03 Mean :0
## 3rd Qu.: 0.000 3rd Qu.: 0.00000 3rd Qu.:0.00e+00 3rd Qu.:0
## Max. :255.000 Max. :164.00000 Max. :1.21e+02 Max. :0
## pixel112 pixel113 pixel114 pixel115
## Min. :0 Min. : 0.0000 Min. : 0.00000 Min. : 0.00000
## 1st Qu.:0 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.00000
## Median :0 Median : 0.0000 Median : 0.00000 Median : 0.00000
## Mean :0 Mean : 0.0009 Mean : 0.00274 Mean : 0.01607
## 3rd Qu.:0 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.00000
## Max. :0 Max. :38.0000 Max. :51.00000 Max. :114.00000
## pixel116 pixel117 pixel118 pixel119
## Min. : 0.00000 Min. : 0.0000 Min. : 0.00 Min. : 0.000
## 1st Qu.: 0.00000 1st Qu.: 0.0000 1st Qu.: 0.00 1st Qu.: 0.000
## Median : 0.00000 Median : 0.0000 Median : 0.00 Median : 0.000
## Mean : 0.08826 Mean : 0.3887 Mean : 1.03 Mean : 2.455
## 3rd Qu.: 0.00000 3rd Qu.: 0.0000 3rd Qu.: 0.00 3rd Qu.: 0.000
## Max. :226.00000 Max. :255.0000 Max. :255.00 Max. :255.000
## pixel120 pixel121 pixel122 pixel123
## Min. : 0.000 Min. : 0.000 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.0 Median : 0.00
## Mean : 4.953 Mean : 8.677 Mean : 13.8 Mean : 20.33
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0 3rd Qu.: 0.00
## Max. :255.000 Max. :255.000 Max. :255.0 Max. :255.00
## pixel124 pixel125 pixel126 pixel127
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 28.04 Mean : 36.08 Mean : 42.71 Mean : 46.09
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 10.00 3rd Qu.: 29.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel128 pixel129 pixel130 pixel131
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 44.54 Mean : 38.95 Mean : 30.96 Mean : 22.91

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## 3rd Qu.: 21.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel132 pixel133 pixel134 pixel135
## Min. : 0.00 Min. : 0.000 Min. : 0.000 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0
## Median : 0.00 Median : 0.000 Median : 0.000 Median : 0.0
## Mean : 14.87 Mean : 8.692 Mean : 4.551 Mean : 2.1
## 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0
## Max. :255.00 Max. :255.000 Max. :255.000 Max. :255.0
## pixel136 pixel137 pixel138 pixel139
## Min. : 0.0000 Min. : 0.0000 Min. : 0.00000 Min. :0
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.:0
## Median : 0.0000 Median : 0.0000 Median : 0.00000 Median :0
## Mean : 0.8388 Mean : 0.2028 Mean : 0.03548 Mean :0
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.:0
## Max. :255.0000 Max. :254.0000 Max. :230.00000 Max. :0
## pixel140 pixel141 pixel142 pixel143
## Min. :0 Min. :0 Min. : 0.00000 Min. : 0.000
## 1st Qu.:0 1st Qu.:0 1st Qu.: 0.00000 1st Qu.: 0.000
## Median :0 Median :0 Median : 0.00000 Median : 0.000
## Mean :0 Mean :0 Mean : 0.00943 Mean : 0.048
## 3rd Qu.:0 3rd Qu.:0 3rd Qu.: 0.00000 3rd Qu.: 0.000
## Max. :0 Max. :0 Max. :95.00000 Max. :255.000
## pixel144 pixel145 pixel146 pixel147
## Min. : 0.0000 Min. : 0.000 Min. : 0.000 Min. : 0.00
## 1st Qu.: 0.0000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00
## Median : 0.0000 Median : 0.000 Median : 0.000 Median : 0.00
## Mean : 0.4116 Mean : 1.438 Mean : 3.558 Mean : 7.15
## 3rd Qu.: 0.0000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00
## Max. :255.0000 Max. :255.000 Max. :255.000 Max. :255.00
## pixel148 pixel149 pixel150 pixel151
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 12.93 Mean : 21.42 Mean : 32.22 Mean : 45.36
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 27.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel152 pixel153 pixel154 pixel155
## Min. : 0.00 Min. : 0.00 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.0 Median : 0.00
## Mean : 60.18 Mean : 75.01 Mean : 86.3 Mean : 91.59
## 3rd Qu.:114.00 3rd Qu.:175.00 3rd Qu.:213.0 3rd Qu.:225.00
## Max. :255.00 Max. :255.00 Max. :255.0 Max. :255.00
## pixel156 pixel157 pixel158 pixel159
## Min. : 0.00 Min. : 0.0 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.0 Median : 0.00 Median : 0.00
## Mean : 89.45 Mean : 80.3 Mean : 65.76 Mean : 49.65
## 3rd Qu.:220.00 3rd Qu.:194.0 3rd Qu.:138.00 3rd Qu.: 51.00
## Max. :255.00 Max. :255.0 Max. :255.00 Max. :255.00
## pixel160 pixel161 pixel162 pixel163

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## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.000
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.000
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.000
## Mean : 34.39 Mean : 21.46 Mean : 12.23 Mean : 6.375
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.000
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.000
## pixel164 pixel165 pixel166 pixel167
## Min. : 0.000 Min. : 0.0000 Min. : 0.000 Min. :0.00e+00
## 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.000 1st Qu.:0.00e+00
## Median : 0.000 Median : 0.0000 Median : 0.000 Median :0.00e+00
## Mean : 2.906 Mean : 0.7934 Mean : 0.126 Mean :4.29e-04
## 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.000 3rd Qu.:0.00e+00
## Max. :255.000 Max. :255.0000 Max. :253.000 Max. :1.80e+01
## pixel168 pixel169 pixel170 pixel171
## Min. :0 Min. :0.0e+00 Min. : 0.0000 Min. : 0.0000
## 1st Qu.:0 1st Qu.:0.0e+00 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median :0 Median :0.0e+00 Median : 0.0000 Median : 0.0000
## Mean :0 Mean :9.5e-05 Mean : 0.0231 Mean : 0.2284
## 3rd Qu.:0 3rd Qu.:0.0e+00 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :0 Max. :4.0e+00 Max. :177.0000 Max. :255.0000
## pixel172 pixel173 pixel174 pixel175
## Min. : 0.000 Min. : 0.000 Min. : 0.000 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.000 Median : 0.00
## Mean : 1.155 Mean : 3.268 Mean : 7.367 Mean : 14.11
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00
## Max. :255.000 Max. :255.000 Max. :255.000 Max. :255.00
## pixel176 pixel177 pixel178 pixel179
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0
## Mean : 24.13 Mean : 37.88 Mean : 54.01 Mean : 72
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 74.00 3rd Qu.:163
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255
## pixel180 pixel181 pixel182 pixel183
## Min. : 0.00 Min. : 0.0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 7.00 Median : 61.0 Median :112.0 Median :128.0
## Mean : 90.47 Mean :107.5 Mean :119.7 Mean :124.9
## 3rd Qu.:223.00 3rd Qu.:250.0 3rd Qu.:252.0 3rd Qu.:252.0
## Max. :255.00 Max. :255.0 Max. :255.0 Max. :255.0
## pixel184 pixel185 pixel186 pixel187
## Min. : 0.0 Min. : 0.0 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.0
## Median :119.0 Median : 75.0 Median : 14.00 Median : 0.0
## Mean :121.9 Mean :111.6 Mean : 95.59 Mean : 74.6
## 3rd Qu.:252.0 3rd Qu.:252.0 3rd Qu.:235.00 3rd Qu.:178.0
## Max. :255.0 Max. :255.0 Max. :255.00 Max. :255.0
## pixel188 pixel189 pixel190 pixel191
## Min. : 0.00 Min. : 0.00 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.0 Median : 0.00

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## Mean : 53.74 Mean : 34.96 Mean : 20.7 Mean : 11.12
## 3rd Qu.: 69.25 3rd Qu.: 0.00 3rd Qu.: 0.0 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.0 Max. :255.00
## pixel192 pixel193 pixel194 pixel195
## Min. : 0.000 Min. : 0.000 Min. : 0.0000 Min. : 0.00000
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.00000
## Median : 0.000 Median : 0.000 Median : 0.0000 Median : 0.00000
## Mean : 5.254 Mean : 1.773 Mean : 0.3457 Mean : 0.02502
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.00000
## Max. :255.000 Max. :255.000 Max. :254.0000 Max. :253.00000
## pixel196 pixel197 pixel198 pixel199
## Min. :0 Min. : 0.00000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.:0 1st Qu.: 0.00000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median :0 Median : 0.00000 Median : 0.0000 Median : 0.0000
## Mean :0 Mean : 0.01781 Mean : 0.1125 Mean : 0.6214
## 3rd Qu.:0 3rd Qu.: 0.00000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :0 Max. :128.00000 Max. :254.0000 Max. :255.0000
## pixel200 pixel201 pixel202 pixel203
## Min. : 0.000 Min. : 0.000 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.00 Median : 0.00
## Mean : 2.452 Mean : 5.981 Mean : 12.39 Mean : 22.36
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.000 Max. :255.000 Max. :255.00 Max. :255.00
## pixel204 pixel205 pixel206 pixel207
## Min. : 0.0 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.0 Median : 0.00 Median : 0.00 Median : 28.00
## Mean : 36.6 Mean : 54.74 Mean : 74.79 Mean : 95.42
## 3rd Qu.: 0.0 3rd Qu.: 80.00 3rd Qu.:170.00 3rd Qu.:226.00
## Max. :255.0 Max. :255.00 Max. :255.00 Max. :255.00
## pixel208 pixel209 pixel210 pixel211 pixel212
## Min. : 0 Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 85 Median :130.0 Median :152.0 Median :156.0 Median :149.0
## Mean :113 Mean :126.3 Mean :133.6 Mean :135.5 Mean :132.9
## 3rd Qu.:250 3rd Qu.:252.0 3rd Qu.:253.0 3rd Qu.:253.0 3rd Qu.:252.0
## Max. :255 Max. :255.0 Max. :255.0 Max. :255.0 Max. :255.0
## pixel213 pixel214 pixel215 pixel216
## Min. : 0 Min. : 0.0 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00
## Median :130 Median : 84.0 Median : 14.00 Median : 0.00
## Mean :126 Mean :112.7 Mean : 92.73 Mean : 68.89
## 3rd Qu.:252 3rd Qu.:251.0 3rd Qu.:227.00 3rd Qu.:152.00
## Max. :255 Max. :255.0 Max. :255.00 Max. :255.00
## pixel217 pixel218 pixel219 pixel220
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.000
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.000
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.000
## Mean : 46.21 Mean : 27.63 Mean : 14.79 Mean : 6.777
## 3rd Qu.: 31.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.000
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.000

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##      pixel221      pixel222      pixel223      pixel224
## Min.   : 0.000 Min.   : 0.0000 Min.   : 0.00000 Min.   : 0.00000
## 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.00000
## Median : 0.000 Median : 0.0000 Median : 0.00000 Median : 0.00000
## Mean   : 2.381 Mean   : 0.4858 Mean   : 0.02155 Mean   : 0.00126
## 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.00000
## Max.   :255.000 Max.   :255.0000 Max.   :196.00000 Max.   :53.00000
##      pixel225      pixel226      pixel227      pixel228
## Min.   : 0.00000 Min.   : 0.0000 Min.   : 0.000 Min.   : 0.000
## 1st Qu.: 0.00000 1st Qu.: 0.0000 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.00000 Median : 0.0000 Median : 0.000 Median : 0.000
## Mean   : 0.06662 Mean   : 0.3836 Mean   : 1.401 Mean   : 3.971
## 3rd Qu.: 0.00000 3rd Qu.: 0.0000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max.   :255.00000 Max.   :255.0000 Max.   :255.000 Max.   :255.000
##      pixel229      pixel230      pixel231      pixel232
## Min.   : 0.000 Min.   : 0.00 Min.   : 0.00 Min.   : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.000 Median : 0.00 Median : 0.00 Median : 0.00
## Mean   : 8.704 Mean   : 16.91 Mean   : 29.64 Mean   : 47.38
## 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 36.00
## Max.   :255.000 Max.   :255.00 Max.   :255.00 Max.   :255.00
##      pixel233      pixel234      pixel235      pixel236
## Min.   : 0.00 Min.   : 0.00 Min.   : 0.0 Min.   : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 0.00 Median : 15.00 Median : 72.0 Median :113.0
## Mean   : 69.18 Mean   : 92.12 Mean   :110.2 Mean   :120.6
## 3rd Qu.:152.25 3rd Qu.:224.00 3rd Qu.:249.0 3rd Qu.:252.0
## Max.   :255.00 Max.   :255.00 Max.   :255.0 Max.   :255.0
##      pixel237      pixel238      pixel239      pixel240      pixel241
## Min.   : 0.0 Min.   : 0.0 Min.   : 0 Min.   : 0.0 Min.   : 0.0
## 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0
## Median :124.0 Median :121.0 Median :117 Median :117.0 Median :115.0
## Mean   :123.9 Mean   :123.2 Mean   :122 Mean   :122.2 Mean   :121.8
## 3rd Qu.:252.0 3rd Qu.:252.0 3rd Qu.:252 3rd Qu.:252.0 3rd Qu.:252.0
## Max.   :255.0 Max.   :255.0 Max.   :255 Max.   :255.0 Max.   :255.0
##      pixel242      pixel243      pixel244      pixel245
## Min.   : 0.0 Min.   : 0.0 Min.   : 0.00 Min.   : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 94.0 Median : 34.0 Median : 0.00 Median : 0.00
## Mean   :116.1 Mean   :100.2 Mean   : 76.63 Mean   : 52.02
## 3rd Qu.:252.0 3rd Qu.:240.0 3rd Qu.:188.00 3rd Qu.: 62.00
## Max.   :255.0 Max.   :255.0 Max.   :255.00 Max.   :255.00
##      pixel246      pixel247      pixel248      pixel249
## Min.   : 0.00 Min.   : 0.00 Min.   : 0.000 Min.   : 0.000
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.00 Median : 0.00 Median : 0.000 Median : 0.000
## Mean   : 31.16 Mean   : 15.89 Mean   : 6.913 Mean   : 2.481
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max.   :255.00 Max.   :255.00 Max.   :255.000 Max.   :255.000
##      pixel250      pixel251      pixel252      pixel253
## Min.   : 0.0000 Min.   : 0.00000 Min.   :0.00e+00 Min.   : 0.00000
## 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.:0.00e+00 1st Qu.: 0.00000

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## Median : 0.0000 Median : 0.00000 Median :0.00e+00 Median : 0.00000
## Mean : 0.4845 Mean : 0.01774 Mean :9.55e-03 Mean : 0.09826
## 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.:0.00e+00 3rd Qu.: 0.00000
## Max. :254.0000 Max. :190.00000 Max. :1.84e+02 Max. :254.00000
## pixel254 pixel255 pixel256 pixel257
## Min. : 0.0000 Min. : 0.000 Min. : 0.000 Min. : 0.000
## 1st Qu.: 0.0000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.0000 Median : 0.000 Median : 0.000 Median : 0.000
## Mean : 0.5517 Mean : 1.805 Mean : 4.648 Mean : 9.881
## 3rd Qu.: 0.0000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.0000 Max. :255.000 Max. :255.000 Max. :255.000
## pixel258 pixel259 pixel260 pixel261
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 19.54 Mean : 34.52 Mean : 55.56 Mean : 79.87
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 79.00 3rd Qu.:196.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel262 pixel263 pixel264 pixel265 pixel266
## Min. : 0 Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 36 Median : 76.0 Median : 73.0 Median : 52.0 Median : 36.00
## Mean :101 Mean :111.9 Mean :111.1 Mean :104.1 Mean : 98.53
## 3rd Qu.:241 3rd Qu.:251.0 3rd Qu.:250.0 3rd Qu.:243.0 3rd Qu.:235.00
## Max. :255 Max. :255.0 Max. :255.0 Max. :255.0 Max. :255.00
## pixel267 pixel268 pixel269 pixel270
## Min. : 0.00 Min. : 0.0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 37.00 Median : 55.0 Median : 76.0 Median : 75.0
## Mean : 98.87 Mean :103.9 Mean :110.7 Mean :111.3
## 3rd Qu.:234.00 3rd Qu.:241.0 3rd Qu.:250.0 3rd Qu.:251.0
## Max. :255.00 Max. :255.0 Max. :255.0 Max. :255.0
## pixel271 pixel272 pixel273 pixel274
## Min. : 0.00 Min. : 0.00 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 30.00 Median : 0.00 Median : 0.0 Median : 0.00
## Mean : 99.14 Mean : 76.66 Mean : 52.1 Mean : 30.89
## 3rd Qu.:239.00 3rd Qu.:188.00 3rd Qu.: 60.0 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.0 Max. :255.00
## pixel275 pixel276 pixel277 pixel278
## Min. : 0.00 Min. : 0.000 Min. : 0.000 Min. : 0.0000
## 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0000
## Median : 0.00 Median : 0.000 Median : 0.000 Median : 0.0000
## Mean : 15.04 Mean : 5.851 Mean : 1.838 Mean : 0.3306
## 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0000
## Max. :255.00 Max. :255.000 Max. :255.000 Max. :254.0000
## pixel279 pixel280 pixel281 pixel282
## Min. : 0.00000 Min. : 0.00000 Min. : 0.00000 Min. : 0.0000
## 1st Qu.: 0.00000 1st Qu.: 0.00000 1st Qu.: 0.00000 1st Qu.: 0.0000
## Median : 0.00000 Median : 0.00000 Median : 0.00000 Median : 0.0000
## Mean : 0.03129 Mean : 0.01488 Mean : 0.09914 Mean : 0.5403
## 3rd Qu.: 0.00000 3rd Qu.: 0.00000 3rd Qu.: 0.00000 3rd Qu.: 0.0000

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```

## Max. :220.00000 Max. :226.00000 Max. :255.00000 Max. :255.0000
## pixel283 pixel284 pixel285 pixel286
## Min. : 0.000 Min. : 0.000 Min. : 0.000 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.000 Median : 0.00
## Mean : 1.709 Mean : 4.309 Mean : 9.806 Mean : 20.48
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00
## Max. :255.000 Max. :255.000 Max. :255.000 Max. :255.00
## pixel287 pixel288 pixel289 pixel290
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 37.5
## Mean : 37.33 Mean : 60.88 Mean : 85.24 Mean :101.8
## 3rd Qu.: 0.00 3rd Qu.:113.00 3rd Qu.:213.00 3rd Qu.:243.0
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.0
## pixel291 pixel292 pixel293 pixel294
## Min. : 0.0 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 45.0 Median : 21.00 Median : 3.00 Median : 0.00
## Mean :103.6 Mean : 93.18 Mean : 82.03 Mean : 78.92
## 3rd Qu.:244.0 3rd Qu.:224.00 3rd Qu.:192.00 3rd Qu.:183.00
## Max. :255.0 Max. :255.00 Max. :255.00 Max. :255.00
## pixel295 pixel296 pixel297 pixel298
## Min. : 0.00 Min. : 0.00 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 3.00 Median : 25.00 Median : 54.0 Median : 60.0
## Mean : 83.99 Mean : 93.76 Mean :104.5 Mean :106.5
## 3rd Qu.:201.00 3rd Qu.:223.00 3rd Qu.:243.0 3rd Qu.:246.0
## Max. :255.00 Max. :255.00 Max. :255.0 Max. :255.0
## pixel299 pixel300 pixel301 pixel302
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 14.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 94.19 Mean : 71.39 Mean : 47.89 Mean : 28.21
## 3rd Qu.:232.00 3rd Qu.:165.00 3rd Qu.: 34.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel303 pixel304 pixel305 pixel306
## Min. : 0.0 Min. : 0.000 Min. : 0.000 Min. : 0.0000
## 1st Qu.: 0.0 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0000
## Median : 0.0 Median : 0.000 Median : 0.000 Median : 0.0000
## Mean : 13.5 Mean : 4.627 Mean : 1.157 Mean : 0.2201
## 3rd Qu.: 0.0 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0000
## Max. :255.0 Max. :255.000 Max. :255.000 Max. :254.0000
## pixel307 pixel308 pixel309 pixel310
## Min. : 0.00000 Min. :0.00e+00 Min. : 0.00000 Min. : 0.0000
## 1st Qu.: 0.00000 1st Qu.:0.00e+00 1st Qu.: 0.00000 1st Qu.: 0.0000
## Median : 0.00000 Median :0.00e+00 Median : 0.00000 Median : 0.0000
## Mean : 0.03067 Mean :6.33e-03 Mean : 0.06705 Mean : 0.4398
## 3rd Qu.: 0.00000 3rd Qu.:0.00e+00 3rd Qu.: 0.00000 3rd Qu.: 0.0000
## Max. :243.00000 Max. :1.50e+02 Max. :254.00000 Max. :255.0000
## pixel311 pixel312 pixel313 pixel314
## Min. : 0.000 Min. : 0.000 Min. : 0.000 Min. : 0.00

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## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.000 Median : 0.00
## Mean : 1.288 Mean : 3.567 Mean : 9.441 Mean : 21.09
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00
## Max. :255.000 Max. :255.000 Max. :255.000 Max. :255.00
## pixel315 pixel316 pixel317 pixel318
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 30.00
## Mean : 40.07 Mean : 65.19 Mean : 88.65 Mean : 99.96
## 3rd Qu.: 5.00 3rd Qu.:134.00 3rd Qu.:221.00 3rd Qu.:241.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel319 pixel320 pixel321 pixel322
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 20.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 94.94 Mean : 81.14 Mean : 72.99 Mean : 76.01
## 3rd Qu.:230.00 3rd Qu.:192.00 3rd Qu.:160.00 3rd Qu.:178.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel323 pixel324 pixel325 pixel326 pixel327
## Min. : 0.0 Min. : 0.00 Min. : 0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 2.0 Median : 37.00 Median : 66 Median : 57.0 Median : 1.0
## Mean : 85.6 Mean : 97.82 Mean :108 Mean :105.7 Mean : 88.7
## 3rd Qu.:211.0 3rd Qu.:232.00 3rd Qu.:245 3rd Qu.:246.0 3rd Qu.:222.0
## Max. :255.0 Max. :255.00 Max. :255 Max. :255.0 Max. :255.0
## pixel328 pixel329 pixel330 pixel331
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 64.59 Mean : 42.46 Mean : 25.37 Mean : 12.66
## 3rd Qu.:131.00 3rd Qu.: 10.00 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel332 pixel333 pixel334 pixel335
## Min. : 0.00 Min. : 0.0000 Min. : 0.0000 Min. :0.00e+00
## 1st Qu.: 0.00 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.:0.00e+00
## Median : 0.00 Median : 0.0000 Median : 0.0000 Median :0.00e+00
## Mean : 4.13 Mean : 0.6492 Mean : 0.1351 Mean :9.64e-03
## 3rd Qu.: 0.00 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.:0.00e+00
## Max. :255.00 Max. :255.0000 Max. :253.0000 Max. :1.12e+02
## pixel336 pixel337 pixel338 pixel339
## Min. :0.00e+00 Min. : 0.00000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.:0.00e+00 1st Qu.: 0.00000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median :0.00e+00 Median : 0.00000 Median : 0.0000 Median : 0.0000
## Mean :3.88e-03 Mean : 0.03502 Mean : 0.2666 Mean : 0.8958
## 3rd Qu.:0.00e+00 3rd Qu.: 0.00000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :1.63e+02 Max. :255.00000 Max. :255.0000 Max. :255.0000
## pixel340 pixel341 pixel342 pixel343
## Min. : 0.000 Min. : 0.000 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.00 Median : 0.00
## Mean : 2.978 Mean : 9.557 Mean : 22.85 Mean : 44.02

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## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 17.25
## Max. :255.000 Max. :255.000 Max. :255.00 Max. :255.00
## pixel344 pixel345 pixel346 pixel347
## Min. : 0.0 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.0 Median : 1.00 Median : 26.00 Median : 9.00
## Mean : 69.6 Mean : 91.09 Mean : 98.91 Mean : 91.42
## 3rd Qu.:158.0 3rd Qu.:229.00 3rd Qu.:240.00 3rd Qu.:225.00
## Max. :255.0 Max. :255.00 Max. :255.00 Max. :255.00
## pixel348 pixel349 pixel350 pixel351
## Min. : 0.00 Min. : 0.0 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.0
## Median : 0.00 Median : 0.0 Median : 0.00 Median : 39.0
## Mean : 79.76 Mean : 79.7 Mean : 89.51 Mean :102.1
## 3rd Qu.:190.00 3rd Qu.:188.0 3rd Qu.:228.00 3rd Qu.:247.0
## Max. :255.00 Max. :255.0 Max. :255.00 Max. :255.0
## pixel352 pixel353 pixel354 pixel355
## Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 89.0 Median :103.0 Median : 62.0 Median : 0.00
## Mean :113.9 Mean :118.5 Mean :107.8 Mean : 84.27
## 3rd Qu.:250.0 3rd Qu.:252.0 3rd Qu.:249.0 3rd Qu.:207.00
## Max. :255.0 Max. :255.0 Max. :255.0 Max. :255.00
## pixel356 pixel357 pixel358 pixel359
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 58.37 Mean : 38.36 Mean : 23.99 Mean : 12.95
## 3rd Qu.: 99.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel360 pixel361 pixel362 pixel363
## Min. : 0.000 Min. : 0.0000 Min. : 0.00000 Min. : 0.0000
## 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.0000
## Median : 0.000 Median : 0.0000 Median : 0.00000 Median : 0.0000
## Mean : 4.459 Mean : 0.4759 Mean : 0.07445 Mean : 0.0109
## 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.0000
## Max. :255.000 Max. :255.0000 Max. :252.00000 Max. :110.0000
## pixel364 pixel365 pixel366 pixel367
## Min. :0.0e+00 Min. : 0.0000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.:0.0e+00 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median :0.0e+00 Median : 0.0000 Median : 0.0000 Median : 0.0000
## Mean :7.6e-04 Mean : 0.0135 Mean : 0.1292 Mean : 0.6131
## 3rd Qu.:0.0e+00 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :3.2e+01 Max. :253.0000 Max. :255.0000 Max. :255.0000
## pixel368 pixel369 pixel370 pixel371
## Min. : 0.000 Min. : 0.0 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 0.000 Median : 0.0 Median : 0.0 Median : 0.00
## Mean : 2.815 Mean : 10.7 Mean : 25.7 Mean : 47.93
## 3rd Qu.: 0.000 3rd Qu.: 0.0 3rd Qu.: 0.0 3rd Qu.: 34.00
## Max. :255.000 Max. :255.0 Max. :255.0 Max. :255.00
## pixel372 pixel373 pixel374 pixel375

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## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 2.00 Median : 21.00 Median : 9.00
## Mean : 72.83 Mean : 91.76 Mean : 97.15 Mean : 91.12
## 3rd Qu.:173.00 3rd Qu.:230.00 3rd Qu.:237.00 3rd Qu.:226.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel376 pixel377 pixel378 pixel379
## Min. : 0.00 Min. : 0.00 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 6.00 Median : 29.00 Median : 64.0 Median :124.0
## Mean : 86.84 Mean : 96.88 Mean :111.5 Mean :124.5
## 3rd Qu.:213.00 3rd Qu.:232.00 3rd Qu.:252.0 3rd Qu.:252.0
## Max. :255.00 Max. :255.00 Max. :255.0 Max. :255.0
## pixel380 pixel381 pixel382 pixel383
## Min. : 0.0 Min. : 0.0 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00
## Median :144.0 Median :135.0 Median : 64.0 Median : 0.00
## Mean :130.7 Mean :127.5 Mean :109.5 Mean : 81.27
## 3rd Qu.:252.0 3rd Qu.:252.0 3rd Qu.:251.0 3rd Qu.:194.00
## Max. :255.0 Max. :255.0 Max. :255.0 Max. :255.00
## pixel384 pixel385 pixel386 pixel387
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.0
## Mean : 55.37 Mean : 37.48 Mean : 24.29 Mean : 13.9
## 3rd Qu.: 82.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.0
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.0
## pixel388 pixel389 pixel390 pixel391
## Min. : 0.000 Min. : 0.000 Min. : 0.00000 Min. : 0.00000
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00000 1st Qu.: 0.00000
## Median : 0.000 Median : 0.000 Median : 0.00000 Median : 0.00000
## Mean : 5.257 Mean : 0.616 Mean : 0.07252 Mean : 0.01288
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00000 3rd Qu.: 0.00000
## Max. :255.000 Max. :255.000 Max. :252.00000 Max. :247.00000
## pixel392 pixel393 pixel394 pixel395
## Min. :0 Min. : 0.000 Min. : 0.00000 Min. : 0.0000
## 1st Qu.:0 1st Qu.: 0.000 1st Qu.: 0.00000 1st Qu.: 0.0000
## Median :0 Median : 0.000 Median : 0.00000 Median : 0.0000
## Mean :0 Mean : 0.005 Mean : 0.05248 Mean : 0.4321
## 3rd Qu.:0 3rd Qu.: 0.000 3rd Qu.: 0.00000 3rd Qu.: 0.0000
## Max. :0 Max. :188.000 Max. :254.00000 Max. :255.0000
## pixel396 pixel397 pixel398 pixel399
## Min. : 0.000 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.000 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 2.936 Mean : 12.36 Mean : 28.52 Mean : 50.57
## 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 48.00
## Max. :255.000 Max. :255.00 Max. :255.00 Max. :255.00
## pixel400 pixel401 pixel402 pixel403
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 15.00 Median : 16.00

```

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## Mean : 73.58 Mean : 89.73 Mean : 94.56 Mean : 92.68
## 3rd Qu.:180.00 3rd Qu.:228.00 3rd Qu.:233.00 3rd Qu.:226.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel404 pixel405 pixel406 pixel407 pixel408
## Min. : 0.00 Min. : 0 Min. : 0.0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 35.00 Median : 92 Median :144.0 Median :173.0 Median :164.0
## Mean : 97.16 Mean :115 Mean :130.1 Mean :139.8 Mean :137.4
## 3rd Qu.:231.00 3rd Qu.:252 3rd Qu.:253.0 3rd Qu.:253.0 3rd Qu.:253.0
## Max. :255.00 Max. :255 Max. :255.0 Max. :255.0 Max. :255.0
## pixel409 pixel410 pixel411 pixel412
## Min. : 0.0 Min. : 0.0 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00
## Median :141.0 Median : 60.0 Median : 0.00 Median : 0.00
## Mean :128.7 Mean :107.7 Mean : 79.75 Mean : 56.31
## 3rd Qu.:252.0 3rd Qu.:250.0 3rd Qu.:191.00 3rd Qu.: 86.00
## Max. :255.0 Max. :255.0 Max. :255.00 Max. :255.00
## pixel413 pixel414 pixel415 pixel416
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.000
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.000
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.000
## Mean : 39.24 Mean : 25.75 Mean : 14.86 Mean : 5.844
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.000
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.000
## pixel417 pixel418 pixel419 pixel420
## Min. : 0.0000 Min. : 0.00000 Min. : 0.00000 Min. :0
## 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.00000 1st Qu.:0
## Median : 0.0000 Median : 0.00000 Median : 0.00000 Median :0
## Mean : 0.8296 Mean : 0.07433 Mean : 0.00193 Mean :0
## 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.00000 3rd Qu.:0
## Max. :255.0000 Max. :209.00000 Max. :51.00000 Max. :0
## pixel421 pixel422 pixel423 pixel424
## Min. :0 Min. : 0.00000 Min. : 0.0000 Min. : 0.000
## 1st Qu.:0 1st Qu.: 0.00000 1st Qu.: 0.0000 1st Qu.: 0.000
## Median :0 Median : 0.00000 Median : 0.0000 Median : 0.000
## Mean :0 Mean : 0.03567 Mean : 0.4788 Mean : 3.477
## 3rd Qu.:0 3rd Qu.: 0.00000 3rd Qu.: 0.0000 3rd Qu.: 0.000
## Max. :0 Max. :254.00000 Max. :255.0000 Max. :255.000
## pixel425 pixel426 pixel427 pixel428
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.0
## Mean : 14.31 Mean : 30.78 Mean : 51.02 Mean : 71.1
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 48.00 3rd Qu.:169.0
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.0
## pixel429 pixel430 pixel431 pixel432
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0
## Median : 0.00 Median : 7.00 Median : 19.00 Median : 56.0
## Mean : 85.14 Mean : 90.78 Mean : 93.73 Mean :104.6
## 3rd Qu.:216.00 3rd Qu.:224.00 3rd Qu.:227.00 3rd Qu.:242.0
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.0

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```

##      pixel433      pixel434      pixel435      pixel436      pixel437
## Min.   : 0.0    Min.   : 0.0    Min.   : 0.0    Min.   : 0    Min.   : 0.0
## 1st Qu.: 0.0    1st Qu.: 0.0    1st Qu.: 0.0    1st Qu.: 0    1st Qu.: 0.0
## Median :121.0    Median :167.0    Median :170.0    Median :149    Median :116.0
## Mean   :123.1    Mean   :135.5    Mean   :139.1    Mean   :132    Mean   :121.7
## 3rd Qu.:252.0    3rd Qu.:253.0    3rd Qu.:253.0    3rd Qu.:253    3rd Qu.:252.0
## Max.   :255.0    Max.   :255.0    Max.   :255.0    Max.   :255    Max.   :255.0
##      pixel438      pixel439      pixel440      pixel441
## Min.   : 0.0    Min.   : 0.00    Min.   : 0.00    Min.   : 0.00
## 1st Qu.: 0.0    1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.00
## Median : 42.0    Median : 0.00    Median : 0.00    Median : 0.00
## Mean   :101.9    Mean   : 78.86    Mean   : 58.85    Mean   : 41.73
## 3rd Qu.:241.0    3rd Qu.:191.00    3rd Qu.:103.00    3rd Qu.: 2.00
## Max.   :255.0    Max.   :255.00    Max.   :255.00    Max.   :255.00
##      pixel442      pixel443      pixel444      pixel445
## Min.   : 0.00    Min.   : 0.0    Min.   : 0.000    Min.   : 0.000
## 1st Qu.: 0.00    1st Qu.: 0.0    1st Qu.: 0.000    1st Qu.: 0.000
## Median : 0.00    Median : 0.0    Median : 0.000    Median : 0.000
## Mean   : 27.17    Mean   : 15.1    Mean   : 5.895    Mean   : 1.058
## 3rd Qu.: 0.00    3rd Qu.: 0.0    3rd Qu.: 0.000    3rd Qu.: 0.000
## Max.   :255.00    Max.   :255.0    Max.   :255.000    Max.   :255.000
##      pixel446      pixel447      pixel448      pixel449
## Min.   : 0.0000    Min.   : 0.00000    Min.   :0    Min.   : 0.00000
## 1st Qu.: 0.0000    1st Qu.: 0.00000    1st Qu.:0    1st Qu.: 0.00000
## Median : 0.0000    Median : 0.00000    Median :0    Median : 0.00000
## Mean   : 0.1438    Mean   : 0.01098    Mean   :0    Mean   : 0.00188
## 3rd Qu.: 0.0000    3rd Qu.: 0.00000    3rd Qu.:0    3rd Qu.: 0.00000
## Max.   :255.0000    Max.   :190.00000    Max.   :0    Max.   :47.00000
##      pixel450      pixel451      pixel452      pixel453
## Min.   : 0.0000    Min.   : 0.0000    Min.   : 0.000    Min.   : 0.00
## 1st Qu.: 0.0000    1st Qu.: 0.0000    1st Qu.: 0.000    1st Qu.: 0.00
## Median : 0.0000    Median : 0.0000    Median : 0.000    Median : 0.00
## Mean   : 0.0666    Mean   : 0.6474    Mean   : 4.449    Mean   : 16.35
## 3rd Qu.: 0.0000    3rd Qu.: 0.0000    3rd Qu.: 0.000    3rd Qu.: 0.00
## Max.   :254.0000    Max.   :255.0000    Max.   :255.000    Max.   :255.00
##      pixel454      pixel455      pixel456      pixel457
## Min.   : 0.00    Min.   : 0.00    Min.   : 0.0    Min.   : 0.0
## 1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.0    1st Qu.: 0.0
## Median : 0.00    Median : 0.00    Median : 0.0    Median : 0.0
## Mean   : 32.25    Mean   : 49.76    Mean   : 66.2    Mean   : 77.7
## 3rd Qu.: 0.00    3rd Qu.: 40.00    3rd Qu.:140.0    3rd Qu.:192.0
## Max.   :255.00    Max.   :255.00    Max.   :255.0    Max.   :255.0
##      pixel458      pixel459      pixel460      pixel461
## Min.   : 0.00    Min.   : 0.00    Min.   : 0.0    Min.   : 0.0
## 1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.0    1st Qu.: 0.0
## Median : 0.00    Median : 7.00    Median : 39.0    Median : 87.0
## Mean   : 83.55    Mean   : 88.88    Mean   :100.5    Mean   :115.4
## 3rd Qu.:206.00    3rd Qu.:218.00    3rd Qu.:240.0    3rd Qu.:252.0
## Max.   :255.00    Max.   :255.00    Max.   :255.0    Max.   :255.0
##      pixel462      pixel463      pixel464      pixel465      pixel466
## Min.   : 0    Min.   : 0.0    Min.   : 0.0    Min.   : 0.0    Min.   : 0.00
## 1st Qu.: 0    1st Qu.: 0.0    1st Qu.: 0.0    1st Qu.: 0.0    1st Qu.: 0.00

```



```

## Median :129   Median :133.0   Median :111.0   Median : 75.0   Median : 27.00
## Mean   :126   Mean   :127.5   Mean   :121.3   Mean   :111.4   Mean   : 95.93
## 3rd Qu.:253   3rd Qu.:253.0   3rd Qu.:252.0   3rd Qu.:251.0   3rd Qu.:229.00
## Max.   :255   Max.   :255.0   Max.   :255.0   Max.   :255.0   Max.   :255.00
##      pixel467      pixel468      pixel469      pixel470
## Min.    : 0.00    Min.    : 0.00    Min.    : 0.00    Min.    : 0.00
## 1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.00
## Median : 0.00    Median : 0.00    Median : 0.00    Median : 0.00
## Mean   : 78.36    Mean   : 60.52    Mean   : 42.63    Mean   : 27.05
## 3rd Qu.:191.00    3rd Qu.:113.00    3rd Qu.: 6.00    3rd Qu.: 0.00
## Max.   :255.00    Max.   :255.00    Max.   :255.00    Max.   :255.00
##      pixel471      pixel472      pixel473      pixel474
## Min.    : 0.00    Min.    : 0.00    Min.    : 0.000    Min.    : 0.0000
## 1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.000    1st Qu.: 0.0000
## Median : 0.00    Median : 0.00    Median : 0.000    Median : 0.0000
## Mean   : 14.34    Mean   : 5.59     Mean   : 1.243    Mean   : 0.1886
## 3rd Qu.: 0.00    3rd Qu.: 0.00    3rd Qu.: 0.000    3rd Qu.: 0.0000
## Max.   :255.00    Max.   :255.00    Max.   :255.000    Max.   :254.0000
##      pixel475      pixel476      pixel477      pixel478
## Min.    : 0.00000    Min.    :0       Min.    : 0.00000    Min.    : 0.0000
## 1st Qu.: 0.00000    1st Qu.:0       1st Qu.: 0.00000    1st Qu.: 0.0000
## Median : 0.00000    Median :0       Median : 0.00000    Median : 0.0000
## Mean   : 0.02012    Mean   :0       Mean   : 0.00371    Mean   : 0.1051
## 3rd Qu.: 0.00000    3rd Qu.:0       3rd Qu.: 0.00000    3rd Qu.: 0.0000
## Max.   :223.00000    Max.   :0       Max.   :71.00000    Max.   :254.0000
##      pixel479      pixel480      pixel481      pixel482
## Min.    : 0.0000    Min.    : 0.000    Min.    : 0.00     Min.    : 0.00
## 1st Qu.: 0.0000    1st Qu.: 0.000    1st Qu.: 0.00     1st Qu.: 0.00
## Median : 0.0000    Median : 0.000    Median : 0.00     Median : 0.00
## Mean   : 0.9673    Mean   : 5.888    Mean   : 18.16     Mean   : 33.28
## 3rd Qu.: 0.0000    3rd Qu.: 0.000    3rd Qu.: 0.00     3rd Qu.: 0.00
## Max.   :255.0000    Max.   :255.000    Max.   :255.00     Max.   :255.00
##      pixel483      pixel484      pixel485      pixel486
## Min.    : 0.00     Min.    : 0.00     Min.    : 0.0      Min.    : 0.00
## 1st Qu.: 0.00     1st Qu.: 0.00     1st Qu.: 0.0      1st Qu.: 0.00
## Median : 0.00     Median : 0.00     Median : 0.0      Median : 0.00
## Mean   : 48.02     Mean   : 60.62     Mean   : 69.4      Mean   : 74.59
## 3rd Qu.: 32.00     3rd Qu.:110.00    3rd Qu.:156.0     3rd Qu.:177.00
## Max.   :255.00     Max.   :255.00     Max.   :255.0      Max.   :255.00
##      pixel487      pixel488      pixel489      pixel490
## Min.    : 0.00     Min.    : 0.00     Min.    : 0.0      Min.    : 0.0
## 1st Qu.: 0.00     1st Qu.: 0.00     1st Qu.: 0.0      1st Qu.: 0.0
## Median : 0.00     Median : 0.00     Median : 35.0      Median : 76.0
## Mean   : 80.26     Mean   : 88.92     Mean   :101.2      Mean   :112.1
## 3rd Qu.:196.00     3rd Qu.:226.00    3rd Qu.:245.0      3rd Qu.:252.0
## Max.   :255.00     Max.   :255.00     Max.   :255.0      Max.   :255.0
##      pixel491      pixel492      pixel493      pixel494
## Min.    : 0.0      Min.    : 0.0      Min.    : 0.0      Min.    : 0.00
## 1st Qu.: 0.0      1st Qu.: 0.0      1st Qu.: 0.0      1st Qu.: 0.00
## Median : 88.0      Median : 81.0      Median : 56.0      Median : 18.00
## Mean   :115.4      Mean   :112.6      Mean   :105.2      Mean   : 93.53
## 3rd Qu.:252.0      3rd Qu.:252.0      3rd Qu.:244.0      3rd Qu.:227.00

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```

## Max. :255.0 Max. :255.0 Max. :255.0 Max. :255.00
## pixel495 pixel496 pixel497 pixel498
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 78.66 Mean : 60.41 Mean : 41.52 Mean : 25.25
## 3rd Qu.:194.00 3rd Qu.:113.00 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel499 pixel500 pixel501 pixel502
## Min. : 0.00 Min. : 0.000 Min. : 0.000 Min. : 0.0000
## 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0000
## Median : 0.00 Median : 0.000 Median : 0.000 Median : 0.0000
## Mean : 12.82 Mean : 5.052 Mean : 1.328 Mean : 0.2043
## 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0000
## Max. :255.00 Max. :255.000 Max. :255.000 Max. :253.0000
## pixel503 pixel504 pixel505 pixel506
## Min. : 0.0000 Min. : 0.00000 Min. :0.00e+00 Min. : 0.0000
## 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.:0.00e+00 1st Qu.: 0.0000
## Median : 0.0000 Median : 0.00000 Median :0.00e+00 Median : 0.0000
## Mean : 0.0181 Mean : 0.00264 Mean :5.33e-03 Mean : 0.1716
## 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.:0.00e+00 3rd Qu.: 0.0000
## Max. :121.0000 Max. :60.00000 Max. :1.26e+02 Max. :255.0000
## pixel507 pixel508 pixel509 pixel510
## Min. : 0.000 Min. : 0.000 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.00 Median : 0.00
## Mean : 1.509 Mean : 7.523 Mean : 20.15 Mean : 34.72
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.000 Max. :255.000 Max. :255.00 Max. :255.00
## pixel511 pixel512 pixel513 pixel514
## Min. : 0.0 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.0 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 48.3 Mean : 58.56 Mean : 65.86 Mean : 71.46
## 3rd Qu.: 32.0 3rd Qu.: 98.00 3rd Qu.:137.00 3rd Qu.:168.00
## Max. :255.0 Max. :255.00 Max. :255.00 Max. :255.00
## pixel515 pixel516 pixel517 pixel518
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.0
## Median : 0.00 Median : 0.00 Median : 16.00 Median : 54.0
## Mean : 76.27 Mean : 82.62 Mean : 94.35 Mean :106.1
## 3rd Qu.:189.00 3rd Qu.:206.00 3rd Qu.:232.00 3rd Qu.:250.0
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.0
## pixel519 pixel520 pixel521 pixel522 pixel523
## Min. : 0.0 Min. : 0.0 Min. : 0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 80.0 Median : 81.0 Median : 58 Median : 15.0 Median : 0.0
## Mean :112.6 Mean :112.2 Mean :106 Mean : 94.6 Mean : 78.1
## 3rd Qu.:252.0 3rd Qu.:250.0 3rd Qu.:244 3rd Qu.:232.0 3rd Qu.:194.2
## Max. :255.0 Max. :255.0 Max. :255 Max. :255.0 Max. :255.0
## pixel524 pixel525 pixel526 pixel527
## Min. : 0.00 Min. : 0.0 Min. : 0.00 Min. : 0.00

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## 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.0 Median : 0.00 Median : 0.00
## Mean : 57.81 Mean : 38.4 Mean : 22.68 Mean : 11.29
## 3rd Qu.: 94.00 3rd Qu.: 0.0 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.0 Max. :255.00 Max. :255.00
## pixel528 pixel529 pixel530 pixel531
## Min. : 0.000 Min. : 0.000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.000 Median : 0.000 Median : 0.0000 Median : 0.0000
## Mean : 4.453 Mean : 1.246 Mean : 0.1621 Mean : 0.0111
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :255.000 Max. :255.000 Max. :255.0000 Max. :151.0000
## pixel532 pixel533 pixel534 pixel535
## Min. :0 Min. : 0.0000 Min. : 0.0000 Min. : 0.000
## 1st Qu.:0 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.000
## Median :0 Median : 0.0000 Median : 0.0000 Median : 0.000
## Mean :0 Mean : 0.0096 Mean : 0.2757 Mean : 2.037
## 3rd Qu.:0 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.000
## Max. :0 Max. :255.0000 Max. :255.0000 Max. :255.000
## pixel536 pixel537 pixel538 pixel539
## Min. : 0.000 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.000 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 8.624 Mean : 21.59 Mean : 36.88 Mean : 51.12
## 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 48.00
## Max. :255.000 Max. :255.00 Max. :255.00 Max. :255.00
## pixel540 pixel541 pixel542 pixel543
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 62.61 Mean : 71.28 Mean : 77.61 Mean : 82.16
## 3rd Qu.:124.00 3rd Qu.:168.00 3rd Qu.:192.00 3rd Qu.:209.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel544 pixel545 pixel546 pixel547
## Min. : 0.00 Min. : 0.0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 3.00 Median : 36.0 Median : 77.0 Median :103.0
## Mean : 89.26 Mean :100.3 Mean :112.4 Mean :118.6
## 3rd Qu.:226.00 3rd Qu.:242.0 3rd Qu.:252.0 3rd Qu.:252.0
## Max. :255.00 Max. :255.0 Max. :255.0 Max. :255.0
## pixel548 pixel549 pixel550 pixel551
## Min. : 0.0 Min. : 0.0 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00
## Median :100.0 Median : 64.0 Median : 10.00 Median : 0.00
## Mean :117.2 Mean :108.7 Mean : 93.43 Mean : 73.22
## 3rd Qu.:252.0 3rd Qu.:249.0 3rd Qu.:232.00 3rd Qu.:174.00
## Max. :255.0 Max. :255.0 Max. :255.00 Max. :255.00
## pixel552 pixel553 pixel554 pixel555
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 51.85 Mean : 33.29 Mean : 18.95 Mean : 9.13

```

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## 3rd Qu.: 57.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel556 pixel557 pixel558 pixel559
## Min. : 0.000 Min. : 0.000 Min. : 0.0000 Min. :0.00e+00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.:0.00e+00
## Median : 0.000 Median : 0.000 Median : 0.0000 Median :0.00e+00
## Mean : 3.536 Mean : 1.026 Mean : 0.1598 Mean :5.43e-03
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.:0.00e+00
## Max. :255.000 Max. :255.000 Max. :253.0000 Max. :1.28e+02
## pixel560 pixel561 pixel562 pixel563
## Min. :0 Min. :0.00e+00 Min. : 0.0000 Min. : 0.000
## 1st Qu.:0 1st Qu.:0.00e+00 1st Qu.: 0.0000 1st Qu.: 0.000
## Median :0 Median :0.00e+00 Median : 0.0000 Median : 0.000
## Mean :0 Mean :9.17e-03 Mean : 0.3236 Mean : 2.294
## 3rd Qu.:0 3rd Qu.:0.00e+00 3rd Qu.: 0.0000 3rd Qu.: 0.000
## Max. :0 Max. :1.78e+02 Max. :255.0000 Max. :255.000
## pixel564 pixel565 pixel566 pixel567
## Min. : 0.000 Min. : 0.00 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 0.000 Median : 0.00 Median : 0.0 Median : 0.00
## Mean : 8.577 Mean : 20.66 Mean : 36.9 Mean : 53.74
## 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.0 3rd Qu.: 64.00
## Max. :255.000 Max. :255.00 Max. :255.0 Max. :255.00
## pixel568 pixel569 pixel570 pixel571
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 22.00
## Mean : 68.99 Mean : 81.35 Mean : 90.21 Mean : 97.62
## 3rd Qu.:159.00 3rd Qu.:207.00 3rd Qu.:229.00 3rd Qu.:241.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel572 pixel573 pixel574 pixel575 pixel576
## Min. : 0.0 Min. : 0 Min. : 0.0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.0 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 56.0 Median : 96 Median :128.0 Median :129.0 Median :109.0
## Mean :106.2 Mean :117 Mean :125.6 Mean :126.7 Mean :119.7
## 3rd Qu.:250.0 3rd Qu.:252 3rd Qu.:252.0 3rd Qu.:253.0 3rd Qu.:252.0
## Max. :255.0 Max. :255 Max. :255.0 Max. :255.0 Max. :255.0
## pixel577 pixel578 pixel579 pixel580
## Min. : 0.0 Min. : 0.00 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00
## Median : 53.0 Median : 0.00 Median : 0.0 Median : 0.00
## Mean :105.3 Mean : 85.09 Mean : 62.3 Mean : 41.47
## 3rd Qu.:246.0 3rd Qu.:213.00 3rd Qu.:122.0 3rd Qu.: 5.00
## Max. :255.0 Max. :255.00 Max. :255.0 Max. :255.00
## pixel581 pixel582 pixel583 pixel584
## Min. : 0.00 Min. : 0.00 Min. : 0.000 Min. : 0.000
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.00 Median : 0.00 Median : 0.000 Median : 0.000
## Mean : 25.23 Mean : 13.66 Mean : 6.501 Mean : 2.634
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.00 Max. :255.00 Max. :255.000 Max. :255.000
## pixel585 pixel586 pixel587 pixel588

```

```

## Min. : 0.000 Min. : 0.0000 Min. : 0.00000 Min. :0.0e+00
## 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.:0.0e+00
## Median : 0.000 Median : 0.0000 Median : 0.00000 Median :0.0e+00
## Mean : 0.755 Mean : 0.1042 Mean : 0.00119 Mean :7.6e-04
## 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.:0.0e+00
## Max. :255.000 Max. :255.0000 Max. :50.00000 Max. :3.2e+01
## pixel589 pixel590 pixel591 pixel592
## Min. :0.00e+00 Min. : 0.0000 Min. : 0.000 Min. : 0.000
## 1st Qu.:0.00e+00 1st Qu.: 0.0000 1st Qu.: 0.000 1st Qu.: 0.000
## Median :0.00e+00 Median : 0.0000 Median : 0.000 Median : 0.000
## Mean :7.07e-03 Mean : 0.2723 Mean : 1.907 Mean : 6.756
## 3rd Qu.:0.00e+00 3rd Qu.: 0.0000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :1.07e+02 Max. :255.0000 Max. :255.000 Max. :255.000
## pixel593 pixel594 pixel595 pixel596
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 16.95 Mean : 32.56 Mean : 51.39 Mean : 70.45
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 50.00 3rd Qu.:169.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel597 pixel598 pixel599 pixel600 pixel601
## Min. : 0.00 Min. : 0 Min. : 0.0 Min. : 0.0 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.0
## Median : 0.00 Median : 32 Median : 82.0 Median :117.0 Median :144.0
## Mean : 87.45 Mean :101 Mean :112.4 Mean :122.6 Mean :130.8
## 3rd Qu.:226.00 3rd Qu.:246 3rd Qu.:252.0 3rd Qu.:252.0 3rd Qu.:252.0
## Max. :255.00 Max. :255 Max. :255.0 Max. :255.0 Max. :255.0
## pixel602 pixel603 pixel604 pixel605
## Min. : 0 Min. : 0.0 Min. : 0.0 Min. : 0.00
## 1st Qu.: 0 1st Qu.: 0.0 1st Qu.: 0.0 1st Qu.: 0.00
## Median :151 Median :130.0 Median : 81.0 Median : 10.00
## Mean :133 Mean :126.3 Mean :111.6 Mean : 90.95
## 3rd Qu.:253 3rd Qu.:252.0 3rd Qu.:250.0 3rd Qu.:222.25
## Max. :255 Max. :255.0 Max. :255.0 Max. :255.00
## pixel606 pixel607 pixel608 pixel609
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 67.71 Mean : 46.19 Mean : 28.82 Mean : 16.23
## 3rd Qu.:145.00 3rd Qu.: 28.00 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel610 pixel611 pixel612 pixel613
## Min. : 0.000 Min. : 0.000 Min. : 0.000 Min. : 0.0000
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.0000
## Median : 0.000 Median : 0.000 Median : 0.000 Median : 0.0000
## Mean : 8.397 Mean : 4.122 Mean : 1.635 Mean : 0.4292
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.0000
## Max. :255.000 Max. :255.000 Max. :255.000 Max. :255.0000
## pixel614 pixel615 pixel616 pixel617
## Min. : 0.00000 Min. :0.0e+00 Min. :0.00e+00 Min. :0.00e+00
## 1st Qu.: 0.00000 1st Qu.:0.0e+00 1st Qu.:0.00e+00 1st Qu.:0.00e+00
## Median : 0.00000 Median :0.0e+00 Median :0.00e+00 Median :0.00e+00

```

```

## Mean      : 0.06571    Mean      :9.3e-04    Mean      :7.38e-04    Mean      :3.33e-04
## 3rd Qu.: 0.00000    3rd Qu.:0.0e+00    3rd Qu.:0.00e+00    3rd Qu.:0.00e+00
## Max.      :251.00000    Max.      :3.9e+01    Max.      :3.10e+01    Max.      :1.00e+01
## pixel618      pixel619      pixel620      pixel621
## Min.      : 0.0000    Min.      : 0.000    Min.      : 0.00    Min.      : 0.00
## 1st Qu.: 0.0000    1st Qu.: 0.000    1st Qu.: 0.00    1st Qu.: 0.00
## Median : 0.0000    Median : 0.000    Median : 0.00    Median : 0.00
## Mean      : 0.1705    Mean      : 1.158    Mean      : 4.03    Mean      : 10.91
## 3rd Qu.: 0.0000    3rd Qu.: 0.000    3rd Qu.: 0.00    3rd Qu.: 0.00
## Max.      :255.0000    Max.      :255.000    Max.      :255.00    Max.      :255.00
## pixel622      pixel623      pixel624      pixel625
## Min.      : 0.00    Min.      : 0.00    Min.      : 0.00    Min.      : 0.00
## 1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.00
## Median : 0.00    Median : 0.00    Median : 0.00    Median : 0.00
## Mean      : 23.26    Mean      : 40.24    Mean      : 60.69    Mean      : 80.79
## 3rd Qu.: 0.00    3rd Qu.: 2.00    3rd Qu.:114.00    3rd Qu.:208.00
## Max.      :255.00    Max.      :255.00    Max.      :255.00    Max.      :255.00
## pixel626      pixel627      pixel628      pixel629      pixel630
## Min.      : 0.00    Min.      : 0    Min.      : 0.0    Min.      : 0    Min.      : 0.0
## 1st Qu.: 0.00    1st Qu.: 0    1st Qu.: 0.0    1st Qu.: 0    1st Qu.: 0.0
## Median : 17.00    Median : 79    Median :121.0    Median :130    Median :118.0
## Mean      : 98.92    Mean      :113    Mean      :122.7    Mean      :126    Mean      :121.9
## 3rd Qu.:245.00    3rd Qu.:252    3rd Qu.:252.0    3rd Qu.:252    3rd Qu.:252.0
## Max.      :255.00    Max.      :255    Max.      :255.0    Max.      :255    Max.      :255.0
## pixel631      pixel632      pixel633      pixel634
## Min.      : 0.0    Min.      : 0.00    Min.      : 0.00    Min.      : 0.00
## 1st Qu.: 0.0    1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.00
## Median : 65.0    Median : 4.00    Median : 0.00    Median : 0.00
## Mean      :108.5    Mean      : 89.06    Mean      : 66.84    Mean      : 45.73
## 3rd Qu.:250.0    3rd Qu.:218.00    3rd Qu.:142.00    3rd Qu.: 30.00
## Max.      :255.0    Max.      :255.00    Max.      :255.00    Max.      :255.00
## pixel635      pixel636      pixel637      pixel638
## Min.      : 0.00    Min.      : 0.00    Min.      : 0.000    Min.      : 0.000
## 1st Qu.: 0.00    1st Qu.: 0.00    1st Qu.: 0.000    1st Qu.: 0.000
## Median : 0.00    Median : 0.00    Median : 0.000    Median : 0.000
## Mean      : 28.86    Mean      : 16.69    Mean      : 8.914    Mean      : 4.548
## 3rd Qu.: 0.00    3rd Qu.: 0.00    3rd Qu.: 0.000    3rd Qu.: 0.000
## Max.      :255.00    Max.      :255.00    Max.      :255.000    Max.      :255.000
## pixel639      pixel640      pixel641      pixel642
## Min.      : 0.000    Min.      : 0.0000    Min.      : 0.0000    Min.      : 0.00000
## 1st Qu.: 0.000    1st Qu.: 0.0000    1st Qu.: 0.0000    1st Qu.: 0.00000
## Median : 0.000    Median : 0.0000    Median : 0.0000    Median : 0.00000
## Mean      : 2.102    Mean      : 0.7971    Mean      : 0.2019    Mean      : 0.02333
## 3rd Qu.: 0.000    3rd Qu.: 0.0000    3rd Qu.: 0.0000    3rd Qu.: 0.00000
## Max.      :255.000    Max.      :255.0000    Max.      :253.0000    Max.      :225.00000
## pixel643      pixel644      pixel645      pixel646
## Min.      : 0.00000    Min.      :0    Min.      :0    Min.      : 0.00000
## 1st Qu.: 0.00000    1st Qu.:0    1st Qu.:0    1st Qu.: 0.00000
## Median : 0.00000    Median :0    Median :0    Median : 0.00000
## Mean      : 0.00171    Mean      :0    Mean      :0    Mean      : 0.06069
## 3rd Qu.: 0.00000    3rd Qu.:0    3rd Qu.:0    3rd Qu.: 0.00000
## Max.      :72.00000    Max.      :0    Max.      :0    Max.      :217.00000

```

##	pixel647	pixel648	pixel649	pixel650	
##	Min. : 0.0000	Min. : 0.000	Min. : 0.000	Min. : 0.00	
##	1st Qu.: 0.0000	1st Qu.: 0.000	1st Qu.: 0.000	1st Qu.: 0.00	
##	Median : 0.0000	Median : 0.000	Median : 0.000	Median : 0.00	
##	Mean : 0.4729	Mean : 1.809	Mean : 5.026	Mean : 12.01	
##	3rd Qu.: 0.0000	3rd Qu.: 0.000	3rd Qu.: 0.000	3rd Qu.: 0.00	
##	Max. :255.0000	Max. :255.000	Max. :255.000	Max. :255.00	
##	pixel651	pixel652	pixel653	pixel654	
##	Min. : 0.00	Min. : 0.00	Min. : 0.00	Min. : 0.00	
##	1st Qu.: 0.00	1st Qu.: 0.00	1st Qu.: 0.00	1st Qu.: 0.00	
##	Median : 0.00	Median : 0.00	Median : 0.00	Median : 0.00	
##	Mean : 23.71	Mean : 39.84	Mean : 58.29	Mean : 76.57	
##	3rd Qu.: 0.00	3rd Qu.: 5.00	3rd Qu.:104.00	3rd Qu.:184.00	
##	Max. :255.00	Max. :255.00	Max. :255.00	Max. :255.00	
##	pixel655	pixel656	pixel657	pixel658	
##	Min. : 0.00	Min. : 0.0	Min. : 0.00	Min. : 0.00	
##	1st Qu.: 0.00	1st Qu.: 0.0	1st Qu.: 0.00	1st Qu.: 0.00	
##	Median : 0.00	Median : 27.0	Median : 30.00	Median : 6.00	
##	Mean : 91.62	Mean : 99.9	Mean : 99.82	Mean : 91.57	
##	3rd Qu.:228.00	3rd Qu.:241.0	3rd Qu.:240.00	3rd Qu.:222.00	
##	Max. :255.00	Max. :255.0	Max. :255.00	Max. :255.00	
##	pixel659	pixel660	pixel661	pixel662	
##	Min. : 0.00	Min. : 0.00	Min. : 0.00	Min. : 0.00	
##	1st Qu.: 0.00	1st Qu.: 0.00	1st Qu.: 0.00	1st Qu.: 0.00	
##	Median : 0.00	Median : 0.00	Median : 0.00	Median : 0.00	
##	Mean : 76.47	Mean : 58.16	Mean : 40.59	Mean : 25.69	
##	3rd Qu.:178.00	3rd Qu.:103.00	3rd Qu.: 12.00	3rd Qu.: 0.00	
##	Max. :255.00	Max. :255.00	Max. :255.00	Max. :255.00	
##	pixel663	pixel664	pixel665	pixel666	
##	Min. : 0.00	Min. : 0.000	Min. : 0.000	Min. : 0.000	
##	1st Qu.: 0.00	1st Qu.: 0.000	1st Qu.: 0.000	1st Qu.: 0.000	
##	Median : 0.00	Median : 0.000	Median : 0.000	Median : 0.000	
##	Mean : 15.21	Mean : 8.414	Mean : 4.275	Mean : 2.105	
##	3rd Qu.: 0.00	3rd Qu.: 0.000	3rd Qu.: 0.000	3rd Qu.: 0.000	
##	Max. :255.00	Max. :255.000	Max. :255.000	Max. :255.000	
##	pixel667	pixel668	pixel669	pixel670	
##	Min. : 0.0000	Min. : 0.0000	Min. : 0.00000	Min. : 0.00000	
##	1st Qu.: 0.0000	1st Qu.: 0.0000	1st Qu.: 0.00000	1st Qu.: 0.00000	
##	Median : 0.0000	Median : 0.0000	Median : 0.00000	Median : 0.00000	
##	Mean : 0.9506	Mean : 0.3095	Mean : 0.06471	Mean : 0.01238	
##	3rd Qu.: 0.0000	3rd Qu.: 0.0000	3rd Qu.: 0.00000	3rd Qu.: 0.00000	
##	Max. :255.0000	Max. :255.0000	Max. :241.00000	Max. :150.00000	
##	pixel671	pixel672	pixel673	pixel674	pixel675
##	Min. :0	Min. :0	Min. :0	Min. : 0.00000	Min. : 0.0000
##	1st Qu.:0	1st Qu.:0	1st Qu.:0	1st Qu.: 0.00000	1st Qu.: 0.0000
##	Median :0	Median :0	Median :0	Median : 0.00000	Median : 0.0000
##	Mean :0	Mean :0	Mean :0	Mean : 0.01805	Mean : 0.1389
##	3rd Qu.:0	3rd Qu.:0	3rd Qu.:0	3rd Qu.: 0.00000	3rd Qu.: 0.0000
##	Max. :0	Max. :0	Max. :0	Max. :253.00000	Max. :253.0000
##	pixel676	pixel677	pixel678	pixel679	
##	Min. : 0.0000	Min. : 0.000	Min. : 0.000	Min. : 0.000	
##	1st Qu.: 0.0000	1st Qu.: 0.000	1st Qu.: 0.000	1st Qu.: 0.000	

```

## Median : 0.0000 Median : 0.000 Median : 0.000 Median : 0.000
## Mean : 0.5567 Mean : 1.637 Mean : 4.152 Mean : 8.925
## 3rd Qu.: 0.0000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.0000 Max. :255.000 Max. :255.000 Max. :255.000
## pixel680 pixel681 pixel682 pixel683
## Min. : 0.00 Min. : 0.0 Min. : 0.00 Min. : 0.0
## 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.0
## Median : 0.00 Median : 0.0 Median : 0.00 Median : 0.0
## Mean : 16.42 Mean : 26.4 Mean : 37.14 Mean : 46.2
## 3rd Qu.: 0.00 3rd Qu.: 0.0 3rd Qu.: 0.00 3rd Qu.: 25.0
## Max. :255.00 Max. :255.0 Max. :255.00 Max. :255.0
## pixel684 pixel685 pixel686 pixel687
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.00
## Mean : 51.24 Mean : 51.04 Mean : 45.93 Mean : 37.29
## 3rd Qu.: 64.00 3rd Qu.: 63.00 3rd Qu.: 31.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.00
## pixel688 pixel689 pixel690 pixel691
## Min. : 0.00 Min. : 0.00 Min. : 0.00 Min. : 0.000
## 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.00 1st Qu.: 0.000
## Median : 0.00 Median : 0.00 Median : 0.00 Median : 0.000
## Mean : 28.02 Mean : 19.44 Mean : 12.16 Mean : 7.313
## 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.00 3rd Qu.: 0.000
## Max. :255.00 Max. :255.00 Max. :255.00 Max. :255.000
## pixel692 pixel693 pixel694 pixel695
## Min. : 0 Min. : 0.000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0 Median : 0.000 Median : 0.0000 Median : 0.0000
## Mean : 4 Mean : 1.992 Mean : 0.9327 Mean : 0.4042
## 3rd Qu.: 0 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :255 Max. :255.000 Max. :255.0000 Max. :255.0000
## pixel696 pixel697 pixel698 pixel699
## Min. : 0.0000 Min. : 0.00000 Min. : 0.00000 Min. : 0
## 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.00000 1st Qu.: 0
## Median : 0.0000 Median : 0.00000 Median : 0.00000 Median : 0
## Mean : 0.1003 Mean : 0.02307 Mean : 0.00276 Mean : 0
## 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.00000 3rd Qu.: 0
## Max. :254.0000 Max. :241.00000 Max. :98.00000 Max. : 0
## pixel700 pixel701 pixel702 pixel703
## Min. : 0 Min. : 0 Min. : 0.00000 Min. : 0.0000
## 1st Qu.: 0 1st Qu.: 0 1st Qu.: 0.00000 1st Qu.: 0.0000
## Median : 0 Median : 0 Median : 0.00000 Median : 0.0000
## Mean : 0 Mean : 0 Mean : 0.00224 Mean : 0.0209
## 3rd Qu.: 0 3rd Qu.: 0 3rd Qu.: 0.00000 3rd Qu.: 0.0000
## Max. : 0 Max. : 0 Max. :42.00000 Max. :254.0000
## pixel704 pixel705 pixel706 pixel707
## Min. : 0.0000 Min. : 0.0000 Min. : 0.000 Min. : 0.000
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.0000 Median : 0.0000 Median : 0.000 Median : 0.000
## Mean : 0.1489 Mean : 0.4729 Mean : 1.306 Mean : 2.991
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.000 3rd Qu.: 0.000

```



```

## Max. :255.0000 Max. :255.0000 Max. :255.000 Max. :255.000
## pixel708 pixel709 pixel710 pixel711
## Min. : 0.000 Min. : 0.000 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.000 Median : 0.000 Median : 0.00 Median : 0.00
## Mean : 5.843 Mean : 9.439 Mean : 13.48 Mean : 16.56
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.000 Max. :255.000 Max. :255.00 Max. :255.00
## pixel712 pixel713 pixel714 pixel715
## Min. : 0.00 Min. : 0.0 Min. : 0.00 Min. : 0.00
## 1st Qu.: 0.00 1st Qu.: 0.0 1st Qu.: 0.00 1st Qu.: 0.00
## Median : 0.00 Median : 0.0 Median : 0.00 Median : 0.00
## Mean : 18.13 Mean : 17.9 Mean : 16.11 Mean : 13.64
## 3rd Qu.: 0.00 3rd Qu.: 0.0 3rd Qu.: 0.00 3rd Qu.: 0.00
## Max. :255.00 Max. :255.0 Max. :255.00 Max. :255.00
## pixel716 pixel717 pixel718 pixel719
## Min. : 0.00 Min. : 0.000 Min. : 0.000 Min. : 0.000
## 1st Qu.: 0.00 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.00 Median : 0.000 Median : 0.000 Median : 0.000
## Mean : 10.89 Mean : 8.055 Mean : 5.334 Mean : 3.186
## 3rd Qu.: 0.00 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.00 Max. :255.000 Max. :255.000 Max. :255.000
## pixel720 pixel721 pixel722 pixel723
## Min. : 0.000 Min. : 0.0000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.000 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.000 Median : 0.0000 Median : 0.0000 Median : 0.0000
## Mean : 1.721 Mean : 0.8351 Mean : 0.3787 Mean : 0.1461
## 3rd Qu.: 0.000 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :255.000 Max. :255.0000 Max. :255.0000 Max. :255.0000
## pixel724 pixel725 pixel726 pixel727
## Min. : 0.0000 Min. : 0.0000 Min. :0.00e+00 Min. :0
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.:0.00e+00 1st Qu.:0
## Median : 0.0000 Median : 0.0000 Median :0.00e+00 Median :0
## Mean : 0.0244 Mean : 0.0051 Mean :2.48e-03 Mean :0
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.:0.00e+00 3rd Qu.:0
## Max. :196.0000 Max. :127.0000 Max. :1.04e+02 Max. :0
## pixel728 pixel729 pixel730 pixel731 pixel732
## Min. :0 Min. :0 Min. :0 Min. :0 Min. : 0.00000
## 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.: 0.00000
## Median :0 Median :0 Median :0 Median :0 Median : 0.00000
## Mean :0 Mean :0 Mean :0 Mean :0 Mean : 0.03505
## 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.: 0.00000
## Max. :0 Max. :0 Max. :0 Max. :0 Max. :255.00000
## pixel733 pixel734 pixel735 pixel736
## Min. : 0.0000 Min. : 0.0000 Min. : 0.000 Min. : 0.000
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.0000 Median : 0.0000 Median : 0.000 Median : 0.000
## Mean : 0.1397 Mean : 0.5031 Mean : 1.146 Mean : 2.162
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.0000 Max. :255.0000 Max. :255.000 Max. :255.000
## pixel737 pixel738 pixel739 pixel740
## Min. : 0.000 Min. : 0.000 Min. : 0.000 Min. : 0.000

```

```

## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.000 Median : 0.000 Median : 0.000 Median : 0.000
## Mean : 3.243 Mean : 4.637 Mean : 5.979 Mean : 6.605
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.000 Max. :255.000 Max. :255.000 Max. :255.000
## pixel741 pixel742 pixel743 pixel744
## Min. : 0.000 Min. : 0.000 Min. : 0.000 Min. : 0.000
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.000
## Median : 0.000 Median : 0.000 Median : 0.000 Median : 0.000
## Mean : 6.444 Mean : 5.681 Mean : 4.657 Mean : 3.773
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.000
## Max. :255.000 Max. :255.000 Max. :255.000 Max. :255.000
## pixel745 pixel746 pixel747 pixel748
## Min. : 0.000 Min. : 0.000 Min. : 0.00 Min. : 0.0000
## 1st Qu.: 0.000 1st Qu.: 0.000 1st Qu.: 0.00 1st Qu.: 0.0000
## Median : 0.000 Median : 0.000 Median : 0.00 Median : 0.0000
## Mean : 2.749 Mean : 1.796 Mean : 1.09 Mean : 0.5632
## 3rd Qu.: 0.000 3rd Qu.: 0.000 3rd Qu.: 0.00 3rd Qu.: 0.0000
## Max. :255.000 Max. :255.000 Max. :255.00 Max. :255.0000
## pixel749 pixel750 pixel751 pixel752
## Min. : 0.0000 Min. : 0.00000 Min. : 0.00000 Min. :0.00e+00
## 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.00000 1st Qu.:0.00e+00
## Median : 0.0000 Median : 0.00000 Median : 0.00000 Median :0.00e+00
## Mean : 0.2396 Mean : 0.09352 Mean : 0.02483 Mean :8.57e-04
## 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.00000 3rd Qu.:0.00e+00
## Max. :255.0000 Max. :255.00000 Max. :253.00000 Max. :2.80e+01
## pixel753 pixel754 pixel755 pixel756 pixel757 pixel758
## Min. : 0.0000 Min. :0 Min. :0 Min. :0 Min. :0 Min. :0
## 1st Qu.: 0.0000 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.:0
## Median : 0.0000 Median :0 Median :0 Median :0 Median :0 Median :0
## Mean : 0.0014 Mean :0 Mean :0 Mean :0 Mean :0 Mean :0
## 3rd Qu.: 0.0000 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0
## Max. :59.0000 Max. :0 Max. :0 Max. :0 Max. :0 Max. :0
## pixel759 pixel760 pixel761 pixel762
## Min. :0 Min. :0 Min. :0.00e+00 Min. : 0.00000
## 1st Qu.:0 1st Qu.:0 1st Qu.:0.00e+00 1st Qu.: 0.00000
## Median :0 Median :0 Median :0.00e+00 Median : 0.00000
## Mean :0 Mean :0 Mean :6.14e-03 Mean : 0.03583
## 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0.00e+00 3rd Qu.: 0.00000
## Max. :0 Max. :0 Max. :1.77e+02 Max. :231.00000
## pixel763 pixel764 pixel765 pixel766
## Min. : 0.00000 Min. : 0.0000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.00000 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.00000 Median : 0.0000 Median : 0.0000 Median : 0.0000
## Mean : 0.08236 Mean : 0.1149 Mean : 0.1787 Mean : 0.3014
## 3rd Qu.: 0.00000 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :253.00000 Max. :254.0000 Max. :254.0000 Max. :255.0000
## pixel767 pixel768 pixel769 pixel770
## Min. : 0.0000 Min. : 0.0000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.0000 Median : 0.0000 Median : 0.0000 Median : 0.0000
## Mean : 0.4136 Mean : 0.5137 Mean : 0.5588 Mean : 0.6779

```

```
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :255.0000 Max. :255.0000 Max. :255.0000 Max. :255.0000
## pixel771 pixel772 pixel773 pixel774
## Min. : 0.0000 Min. : 0.0000 Min. : 0.0000 Min. : 0.0000
## 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000 1st Qu.: 0.0000
## Median : 0.0000 Median : 0.0000 Median : 0.0000 Median : 0.0000
## Mean : 0.6028 Mean : 0.4892 Mean : 0.3402 Mean : 0.2193
## 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000 3rd Qu.: 0.0000
## Max. :255.0000 Max. :255.0000 Max. :255.0000 Max. :254.0000
## pixel775 pixel776 pixel777 pixel778
## Min. : 0.0000 Min. : 0.00000 Min. : 0.00000 Min. : 0.00000
## 1st Qu.: 0.0000 1st Qu.: 0.00000 1st Qu.: 0.00000 1st Qu.: 0.00000
## Median : 0.0000 Median : 0.00000 Median : 0.00000 Median : 0.00000
## Mean : 0.1171 Mean : 0.05902 Mean : 0.02019 Mean : 0.01724
## 3rd Qu.: 0.0000 3rd Qu.: 0.00000 3rd Qu.: 0.00000 3rd Qu.: 0.00000
## Max. :254.0000 Max. :253.00000 Max. :253.00000 Max. :254.00000
## pixel779 pixel780 pixel781 pixel782 pixel783
## Min. : 0.00000 Min. :0 Min. :0 Min. :0 Min. :0
## 1st Qu.: 0.00000 1st Qu.:0 1st Qu.:0 1st Qu.:0 1st Qu.:0
## Median : 0.00000 Median :0 Median :0 Median :0 Median :0
## Mean : 0.00286 Mean :0 Mean :0 Mean :0 Mean :0
## 3rd Qu.: 0.00000 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0 3rd Qu.:0
## Max. :62.00000 Max. :0 Max. :0 Max. :0 Max. :0
```

Como se observa en el resumen el dataset cuenta con 785 columnas y 42000 filas donde la idea es la columna label es el dígito dibujado por el usuario. El resto de las columnas contienen los valores de cada píxel de la imagen asociada. Cada imagen tiene 28 píxeles de altura y 28 píxeles de ancho, para un total de 784 píxeles en total. Cada píxel tiene un único valor de píxel asociado, que indica la luminosidad u oscuridad de ese píxel, con números más altos que significan más oscuros. Este valor de píxel es un número entero entre 0 y 255, inclusive

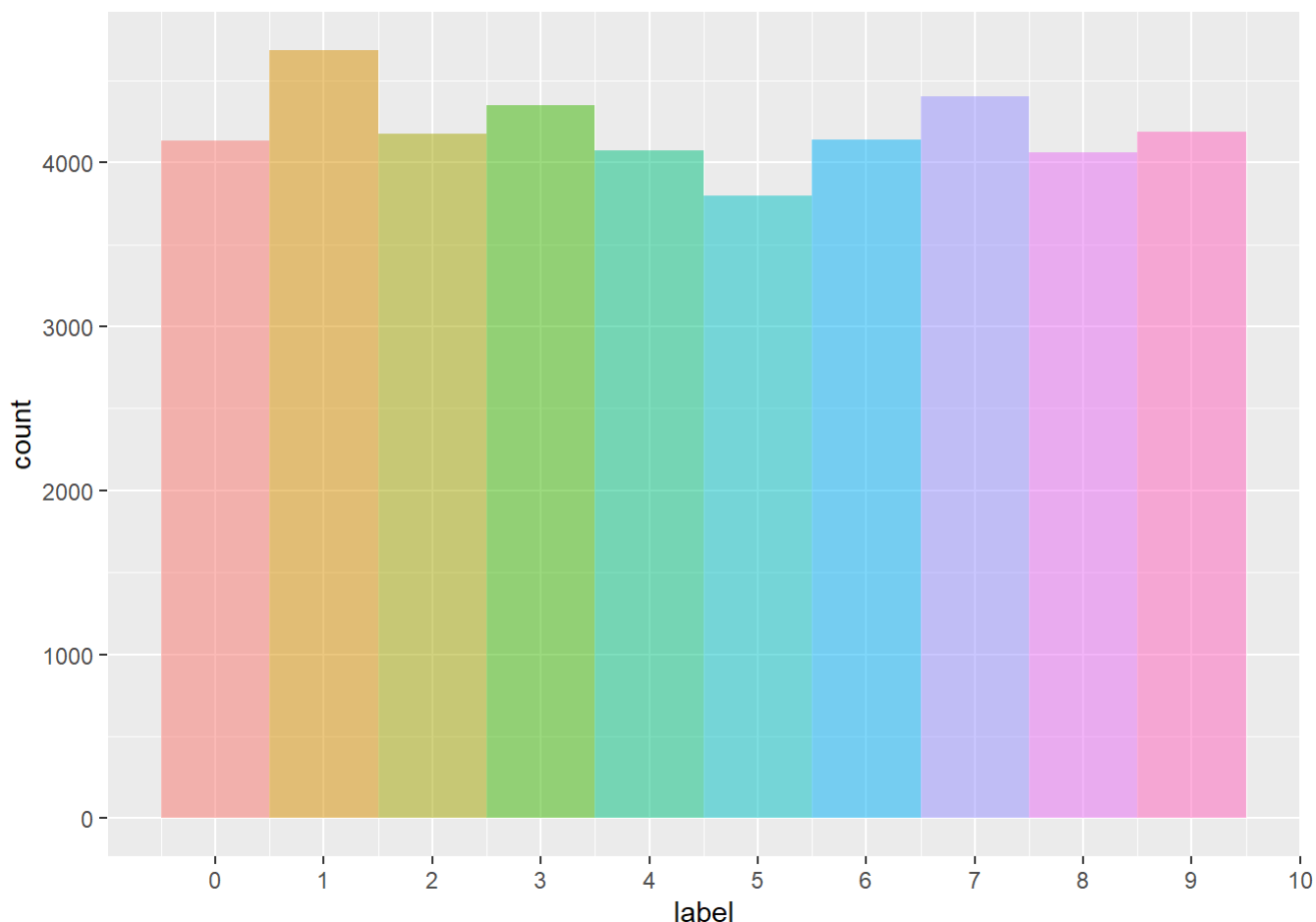
Analisis Exploratorio

Para poder entrar en contexto con los datos primero veremos la cantidad de labels o dígitos proporcionados, con la intención de determinar que dígito contiene más píxeles

```
table(db$label)
```

```
##
## 0 1 2 3 4 5 6 7 8 9
## 4132 4684 4177 4351 4072 3795 4137 4401 4063 4188
```

```
ggplot(data = db) + geom_histogram(aes(x=label,fill=factor(label)),bins=10, position = "stack",alpha = 0.5)+theme(legend.position="none")+ scale_x_continuous(breaks = seq(0, 100, 1.))
```



Tras observar graficamente vemos que el numero 1 es el que mas filas tiene guardado datos, dando a entender que puede ser el numero mas dificil a predecir por ello es necesario tener mas filas con datos de este, y el siguiente numero es el 7, esto con la idea que estos numeros tienden a confundirse por ello fue necesario mas iteraciones de prueba para posterior almacenar su resultado en este dataset.

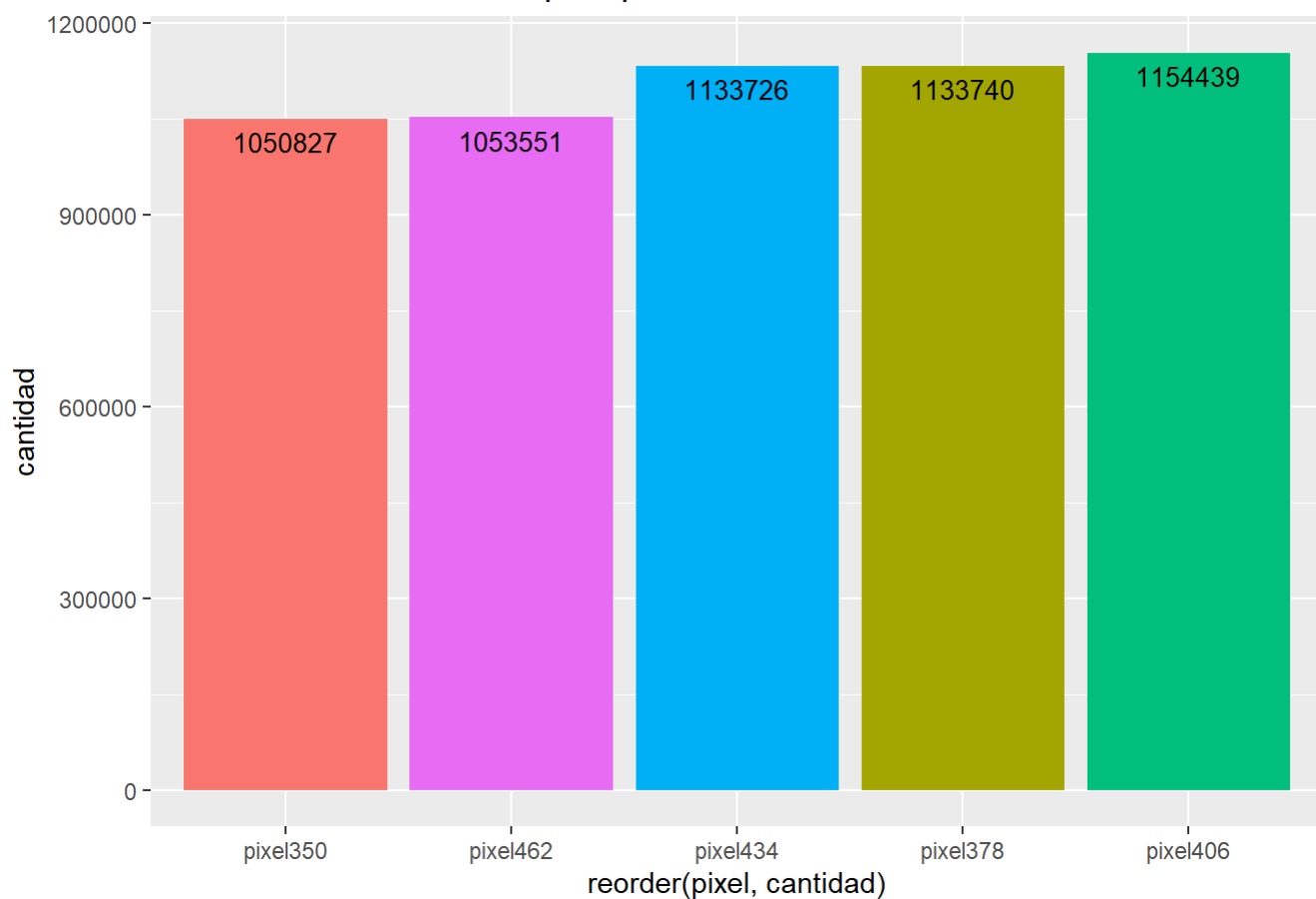
```
number1<- subset(db, label == 1)
#Save all one's in new dataframe
dt<-colSums(number1[,-1])

dtF<-data.frame (pixel = c(colnames(number1[,-1])),
                  cantidad = c(dt)
                  )

dtF2 <- dtF[order(-dtF$cantidad),]
dtF2<-head(dtF2,n=5)

ggplot(data=dtF2, aes(x=reorder(pixel,cantidad),y=cantidad, fill=pixel)) +
  geom_bar(stat="identity", position=position_dodge())+
  geom_text(aes(label=cantidad), vjust=1.6, color="black",
            position = position_dodge(0.9), size=3.5)+
  labs(title="Suma de valores de cada pixel para el numero 1 ") +
  theme(legend.position="none")
```

Suma de valores de cada pixel para el numero 1



Tal como se observa en la grafica anterior, se puede observar que el pixel numero 406 del numero 1 presenta mas cambios de color, o por otro lado es un pixel que en su mayoria esta pintado o tiene un valor del color.

Analisis del pixel 406

```
number1Group<-subset(db,db$label==1)
summary(as.factor(number1Group$pixel406))
```

##	253	254	255	252	251	250	249	0	240	243
##	1680	1129	758	475	74	43	19	16	16	16
##	248	246	241	247	244	233	235	230	242	196
##	14	13	12	12	11	10	10	9	9	8
##	209	216	221	227	234	236	239	191	207	231
##	8	8	8	8	8	8	8	7	7	7
##	195	203	238	151	223	224	225	232	128	154
##	6	6	6	5	5	5	5	5	4	4
##	155	159	177	188	198	200	204	205	206	214
##	4	4	4	4	4	4	4	4	4	4
##	215	218	222	237	138	148	157	170	172	184
##	4	4	4	4	3	3	3	3	3	3
##	192	197	210	213	217	220	226	228	245	32
##	3	3	3	3	3	3	3	3	3	2
##	34	51	56	57	64	74	102	115	116	117
##	2	2	2	2	2	2	2	2	2	2
##	119	124	126	134	143	144	149	150	156	165
##	2	2	2	2	2	2	2	2	2	2
##	171	182	185	186	189	190	194	202	211 (Other)	
##	2	2	2	2	2	2	2	2	2	61

como se logra observar anteriormente el pixel 406 tiene mas cambios de color, demostrando que efectivamente este pixel si cambia mucho el color de su relleno.

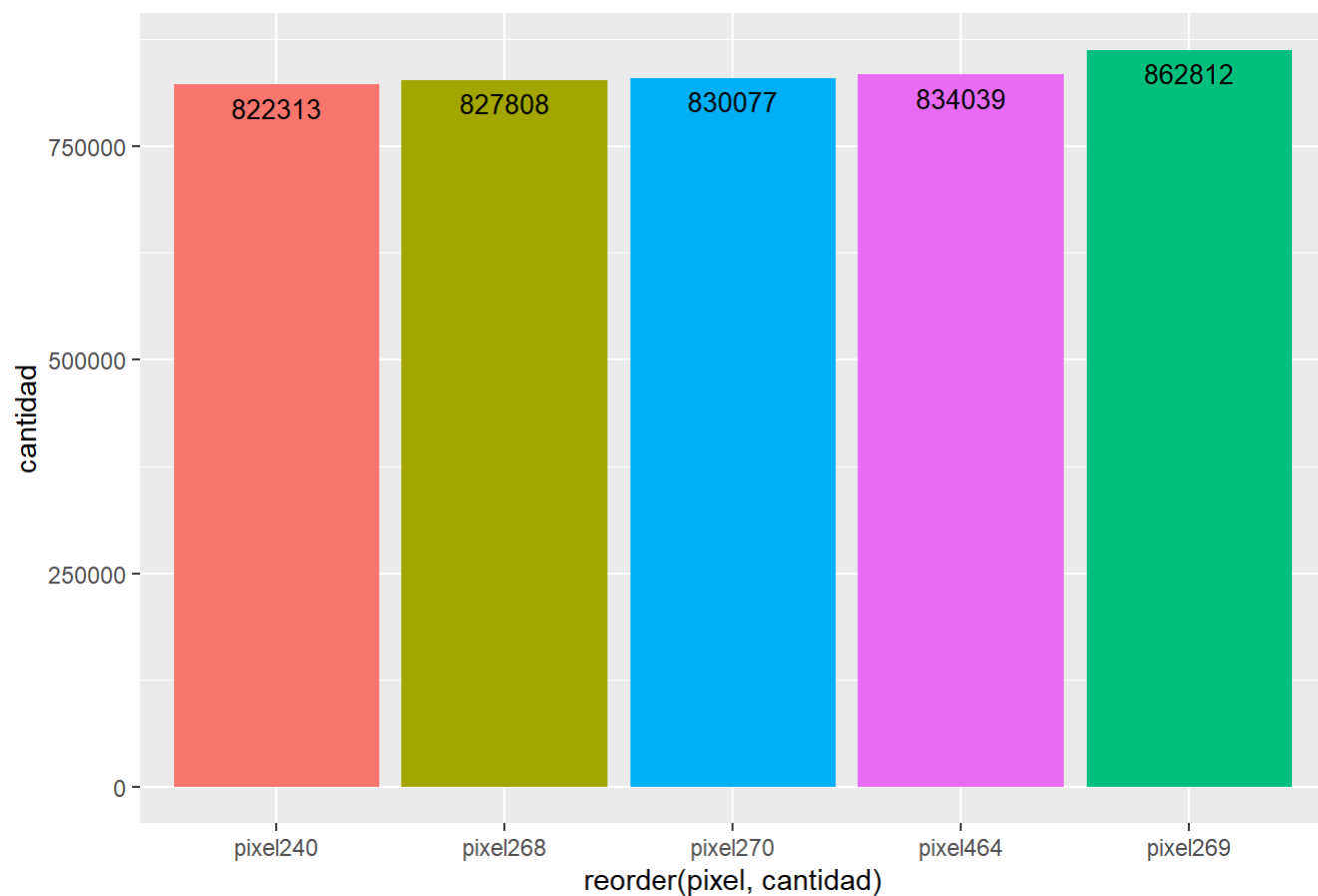
```
number7<- subset(db, label == 7)
#Save all one's in new dataframe
dt7<-colSums(number7[,-1])

dtF7<-data.frame (pixel = c(colnames(number7[,-1])),
                  cantidad = c(dt7)
                  )

dtF27 <- dtF7[order(-dtF7$cantidad),]
dtF27<-head(dtF27,n=5)

ggplot(data=dtF27, aes(x=reorder(pixel,cantidad),y=cantidad, fill=pixel)) +
  geom_bar(stat="identity", position=position_dodge())+
  geom_text(aes(label=cantidad), vjust=1.6, color="black",
            position = position_dodge(0.9), size=3.5)+
  labs(title="Suma de valores de cada pixel para el numero 7 ") +
  theme(legend.position="none")
```

Suma de valores de cada pixel para el numero 7



Tras observar los pixeles del numero 7 se observo que en este caso el pixel con mas color o mas datos es el pixel 269, indicando que a pesar que el numero 1 y 7 se parecen los pixeles con mas color son distintos.

Analisis del pixel 406

```
number7Group<-subset(db,db$label==7)
summary(as.factor(number7Group$pixel269))
```

##	253	252	254	0	255	251	250	234	217	235
##	1065	584	508	326	147	44	40	31	24	24
##	243	249	128	191	236	241	244	200	233	247
##	23	22	20	19	19	19	19	18	18	18
##	215	240	195	230	232	245	183	226	228	246
##	17	17	14	14	14	14	13	13	13	13
##	248	37	71	96	114	139	170	184	214	231
##	13	12	12	12	12	12	12	12	12	12
##	238	116	140	169	222	223	64	86	106	127
##	12	11	11	11	11	11	10	10	10	10
##	154	168	176	187	198	202	210	220	221	229
##	10	10	10	10	10	10	10	10	10	10
##	242	10	113	118	126	131	149	156	188	213
##	10	9	9	9	9	9	9	9	9	9
##	237	57	84	102	133	163	181	199	203	205
##	9	8	8	8	8	8	8	8	8	8
##	208	227	239	2	23	56	82	138	158	159
##	8	8	8	7	7	7	7	7	7	7
##	160	174	180	192	216	225	9	17	18 (Other)	
##	7	7	7	7	7	7	6	6	6	638

como se logra observar anteriormente el pixel 269 tiene mas cambios de color, demostrando que efectivamente este pixel si cambia mucho el color de su relleno. De hecho, se observa que este pixel de este numero tiene mas cambios que el pixel 406 del numero 1.