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Assignment 13

1.this is my data from the digitizer

1.7054908485856903, 60.16385108337545
2.0089850249584025, 58.62774164271667
3.4465890183028285, 64.73371874665652
4.005657237936772, 68.62450092418031
4.341098169717139, 66.94868198235756
4.9960066555740426, 72.92676581160002
6.305823627287854, 65.24923058760159
13.797337770382697, 50.79821730965759
5.842595673876872, 46.45772345425768
3.1111480865224626, 43.01618957317994
6.098169717138104, 37.26377250037815
6.976705490848586, 19.566772304843
7.471880199667222, 9.394623152100536
7.232279534109818, 7.1701605970832105
6.705158069883527, 5.506852953872155
6.305823627287854, 8.297567616426434
6.225956738768719, 7.184757112130185
6.130116472545756, 8.021623974823925
6.06622296173045, 6.90858177981265
5.507154742096507, 6.359706475903053
5.235607321131448, 8.870075373269245
5.1078202995008315, 7.897206060852028
4.820299500831947, 10.686298888401083
4.532778702163061, 7.487808567391369
4.053577371048252, 8.74797436644765
3.8778702163061562, 7.775800126175511
3.861896838602329, 12.6496460075779
4.404991680532445, 15.565937037679248
3.0153078202995007, 17.67478592589587
3.1910149750415973, 19.064698525369757
3.031281198003328, 23.66213738373959
1.8013311148086522, 23.95846980826485
1.5297836938435934, 18.81030212026519
2.4242928452579036, 16.151651165278864
3.1111480865224626, 12.521289351450477
5.5870216306156415, 24.042805228536324
11.433277870216306, 4.324303544351423
7.935108153078204, 2.8433364938701686
5.523128119800333, -0.8813234409760469
4.836272878535773, 3.445268971521969
4.021630615640598, 0.11517832437438358
3.047254575707155, 3.6104644513394106
2.9833610648918474, 3.0544067352638393
2.919467554076539, 2.498349019188268
2.312479201331114, 1.9501687874237632
2.07287853577371, 6.548766099368748
1.8173044925124788, 8.919657186285974
1.7054908485856903, 4.465403189805599
1.0505823627287851, 11.297962376084214
1.2262895174708817, 2.9406465941833915

The main way my digitizer data differs from the actual data is that there are many more significant figures. Also some of the digitizer values are off but thats most likely due to the lower resolution of the JPG image

2.

```
> cor.test(stategundata$`Homicide rate`, stategundata$`Gun accident rate`,
+          method = "pearson")

        Pearson's product-moment correlation

data:  stategundata$`Homicide rate` and stategundata$`Gun accident rate`
t = 3.1273, df = 49, p-value = 0.002966
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.1490752 0.6144176
sample estimates:
      cor
0.4079012

>
```

By analyzing the pearson correlation we can see that in terms of homicide rates, guns are a very heavily contributing factor. In this correlations I compared homicide rates and gun incident rates and the two are very heavily intertwined. This suggests that a large percent of gun incidents are responsible for homocide

3. Installing the energy package and using the distance correlation function dcor this is the value we get when comparing the homicide rate and gun incident rate

```
> dcor(stategundata$`Homicide rate`,stategundata$`Gun accident rate`)
[1] 0.4461698
```

This suggests something very similar to the pearson correlations and since about 44% is displayed here it shows that a large percent of homicides involves guns

4. The mistake that the author made is that He did not take into account the fact that state homicide rate should not be compared to state gun laws. This is because it should show instead the correlation between guns themselves and homicide rate, and from there you can see whether or not states with gun laws have reduced gun related homocides.

5. The best way to fix the article would be first to go state by states and compare homicide rates and gun related incidents. This should give us the overlap between the two data sets (gun related homicides.) And afterwards, in order to see if gun laws actually reduced gun related homicides, we would then compare the states with gun laws and the states without gun laws. And from there we would most certainly see that

enstating gun laws does in fact reduce gun related homicides, unlike what the author had found.