R Project 1 - Hello R

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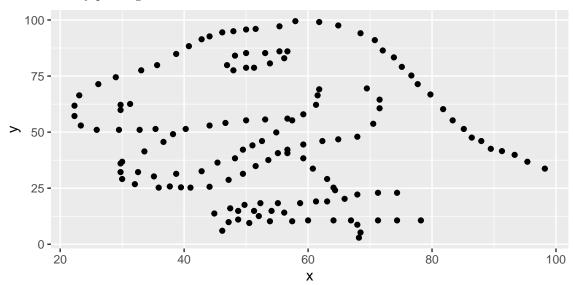
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Exercise 1

- $\bullet\,$ The datasaurus_dozen file has $1846\ rows$ and $3\ variables\ (columns)$
- The variables included in the data frame are:
 - dataset: indicates which dataset the data are from
 - x: x-values
 - y: y-values

Exercise 2

First we need to visualize this data to assess the form of the relationship between the variables x and y. We can do this by plotting the data in the dino dataset:



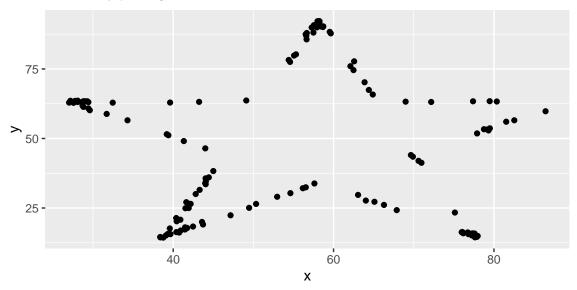
Once we assess the visual relationship between the two variables, we can calculate the correlation between ${\tt x}$ and ${\tt y}$ in this dataset. When we do this, we get:

```
## # A tibble: 1 x 1
## r
## <dbl>
## 1 -0.0645
```

Calculating a correlation coefficient is not particularly needed for this case since the relationship between x and y is not linear.

Exercise 3

We need to visualize and asses the form of the relationship between the variables x and yfor the star dataset. We can do this by plotting the data in the star dataset:

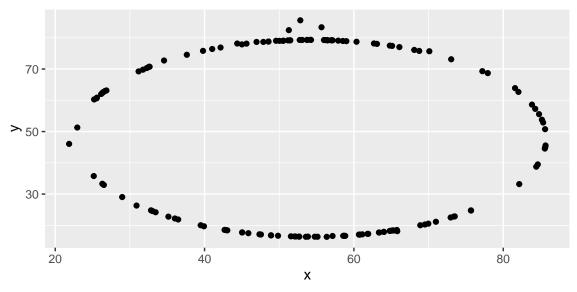


Once we assess the visual relationship between the two variables, we can calculate the correlation between x and y in this dataset. When we do this, we get:

When comparing the value of r in the star dataset to the value of r in the dino data set, you will notice that the r value of star is -0.0630 where as the r value of dino is -0.0645. There is a -0.0015 difference between the two.

Exercise 4

We need to visualize and asses the form of the relationship between the variables x and yfor the circle dataset. We can do this by plotting the data in the circle dataset:

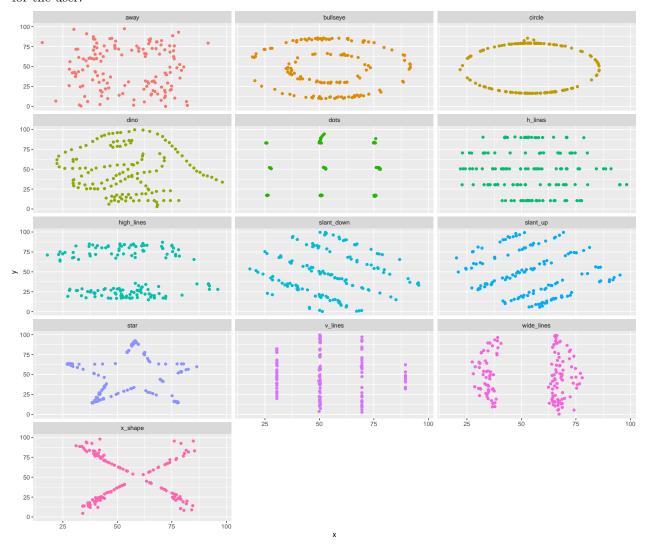


Once we assess the visual relationship between the two variables, we can calculate the correlation between ${\tt x}$ and ${\tt y}$ in this dataset. When we do this, we get:

When comparing the value of r in the circle dataset to the value of r in the dino data set, you will notice that the r value of circle is -0.0683 where as the r value of dino is -0.0645. There is a -0.0038 difference between the two.

Exercise 5

We can plot all of the datasets at once and organize them into columns, displaying a more neat visualization for the user



We can group the summary correlation in a similar manner:

```
## # A tibble:
## # 13 x 2
## dataset
## <chr>
```

- ## 1 away
- ## 2 bullseye
- ## 3 circle
- ## 4 dino
- ## 5 dots
- ## 6 h_lines
- ## 7 high_lines
- ## 8 slant_down
- ## 9 slant_up
- ## 10 star
- ## 11 v_lines
- ## 12 wide_lines
- ## 13 x_shape
- ## # ... with 1
- ## # more
- ## # variable:
- ## # r <dbl>