

# Lab 0 - Hello R!

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## Load Packages

```
library(tidyverse)
library(datasauRus)
```

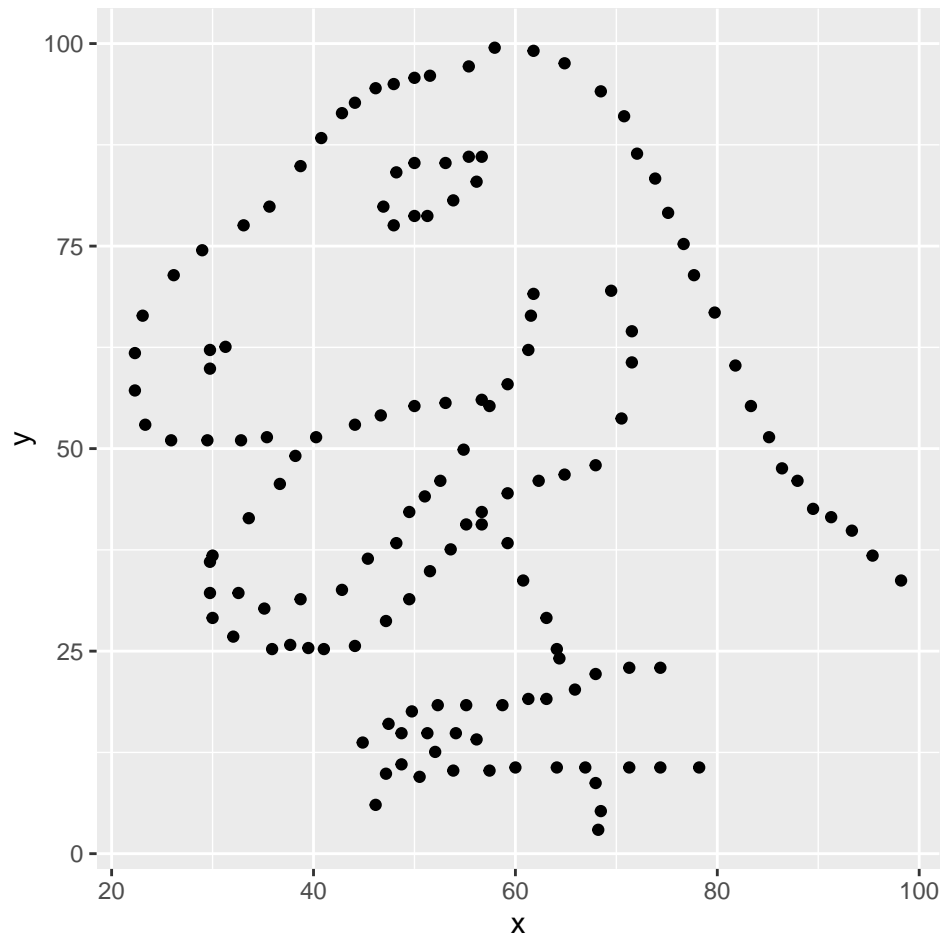
## Exercise 1

1846 rows and 3 columns. The 3 variables included are “dataset”, “x”, and “y”.

## Exercise 2

First, let's plot the data in the dino dataset:

```
dino_data <- datasaurus_dozen %>%
  filter(dataset == "dino")
ggplot(data = dino_data, mapping = aes(x = x, y = y)) +
  geom_point()
```



Next calculate the correlation between x and y in this dataset.

```
dino_data %>%  
  summarize(r = cor(x, y))
```

```
# A tibble: 1 x 1
```

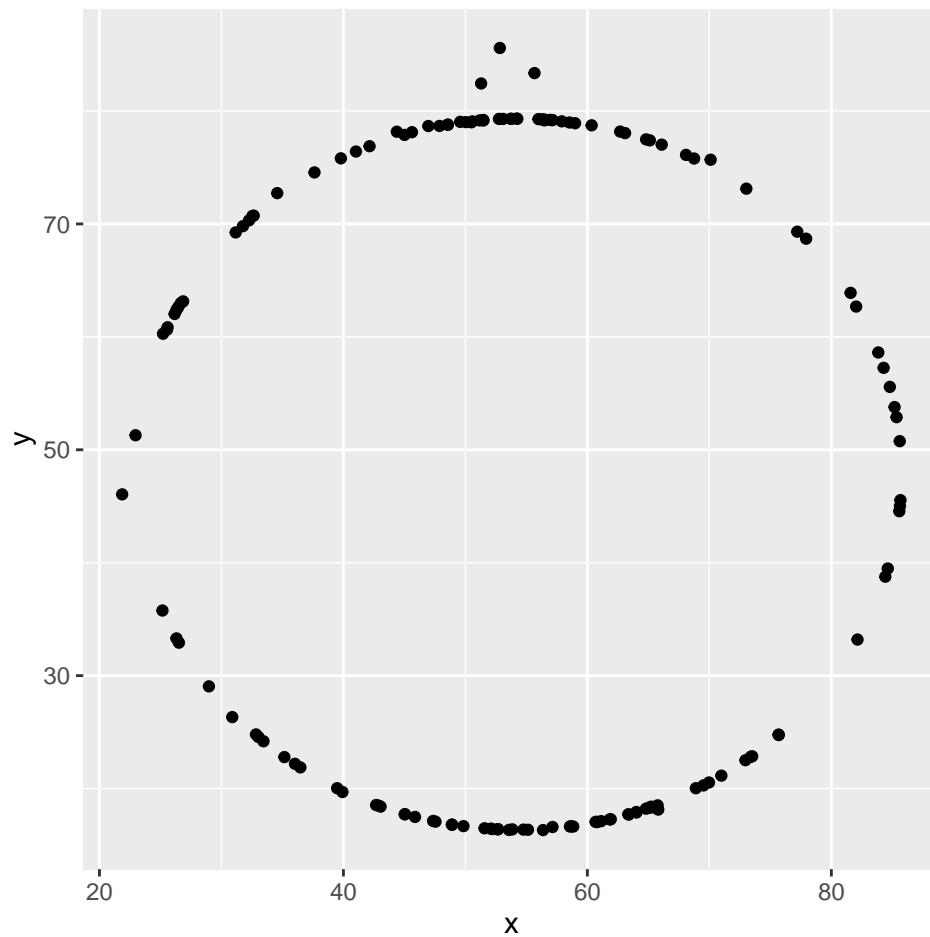
```
  r  
  <dbl>  
1 -0.0645
```

```
r = -0.06447185
```

### Exercise 3

Plotting data from the circle dataset:

```
circle_data <- datasaurus_dozen %>%  
  filter(dataset == "circle")  
ggplot(data = circle_data, mapping = aes(x = x, y = y)) +  
  geom_point()
```



Correlation between x and y for circle:

```
circle_data %>%  
  summarize(r = cor(x, y))
```

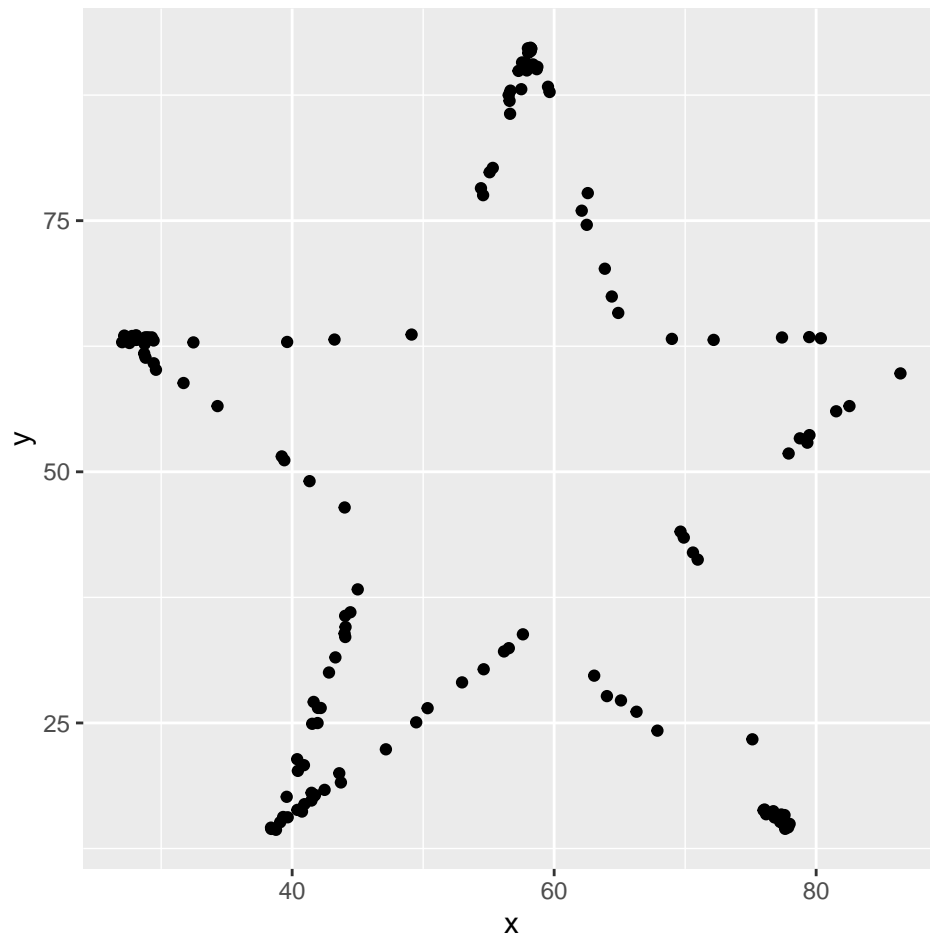
```
# A tibble: 1 x 1
      r
  <dbl>
1 -0.0683
```

$r = -0.06834336$ , which is slightly less than the correlation coefficient for the dino dataset.

## Exercise 4

Plotting data from the star dataset:

```
star_data <- datasaurus_dozen %>%
  filter(dataset == "star")
ggplot(data = star_data, mapping = aes(x = x, y = y)) +
  geom_point()
```



Correlation between x and y for star:

```
star_data %>%
  summarize(r = cor(x, y))
```

# A tibble: 1 x 1

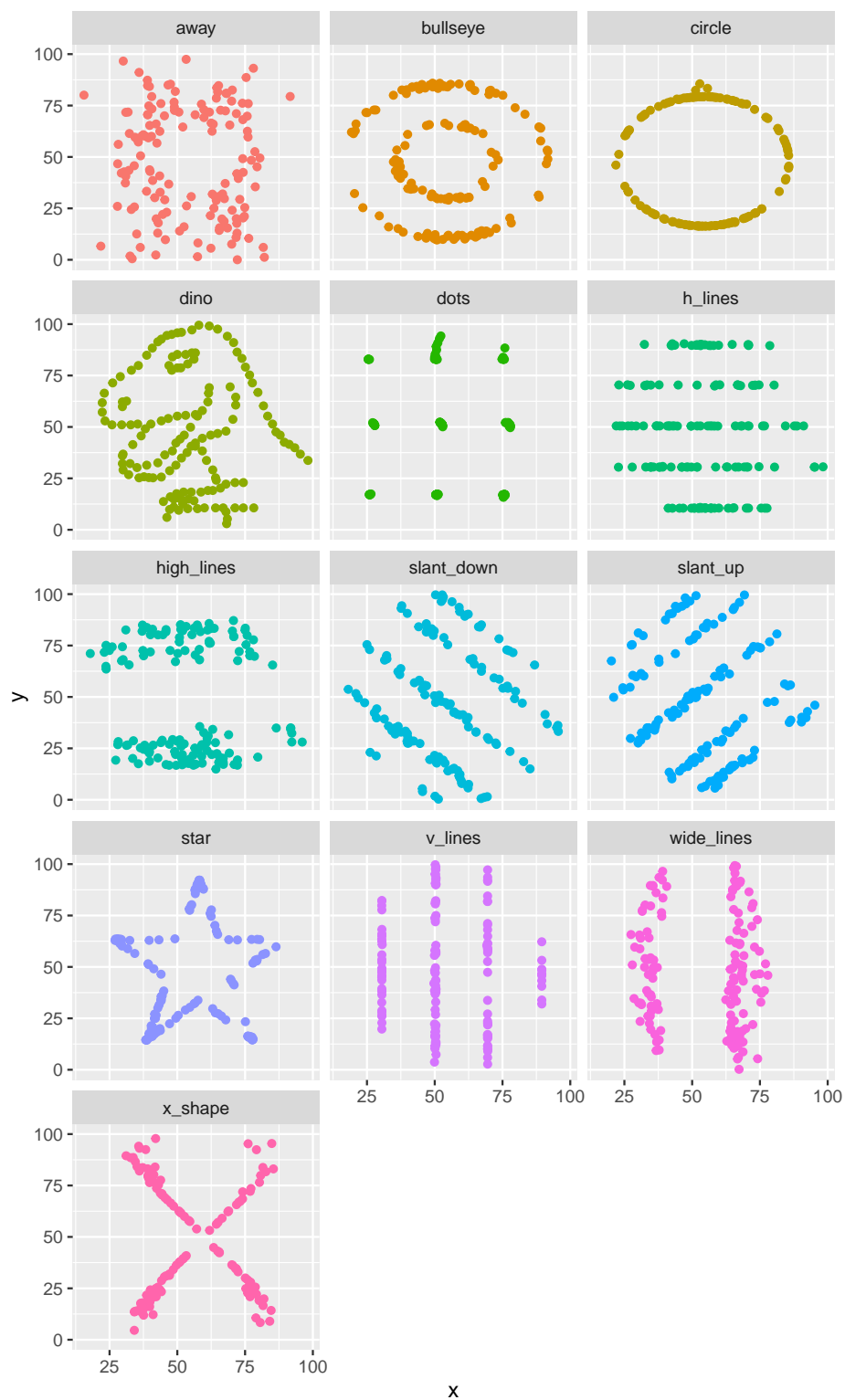
```
      r
  <dbl>
1 -0.0630
```

r = - 0.0629611.

## Exercise 5

Plotting data from all datasets at the same time:

```
ggplot(datasaurus_dozen, aes(x = x, y = y, color = dataset))+  
  geom_point()+  
  facet_wrap(~ dataset, ncol = 3) +  
  theme(legend.position = "none")
```



Correlation between x and y for all datasets:

```
datasaurus_dozen |>
  group_by(dataset) |>
  summarize(r = cor(x, y))
```

```
# A tibble: 13 x 2
  dataset      r
  <chr>      <dbl>
1 away      -0.0641
2 bullseye  -0.0686
3 circle    -0.0683
4 dino      -0.0645
5 dots      -0.0603
6 h_lines   -0.0617
7 high_lines -0.0685
8 slant_down -0.0690
9 slant_up  -0.0686
10 star     -0.0630
11 v_lines  -0.0694
12 wide_lines -0.0666
13 x_shape  -0.0656
```