Before we get started, make sure that you have Excel, R Studio, and tidyverse installed. You'll need these for the tasks described in this tutorial.

### Data Visualization

#### Tutorial 2: Digi Data Visualization: Lecture 2

To work with the data, first open your original csv file. In Excel, copy and paste the data into a new column under the name Wars. This will be used for the chart.

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### Task 1: Bar vs. Column Chart

- **Objective:** Create a bar chart and a column chart showing the number of characters for different genders within the Star Wars dataset.

**Steps:**

1. **Start with the original dataset:** Copy the character names and their respective genders into a new Excel file.
2. **Gender Count:** Use the COUNTIF function to count the number of male, female, and hermaphrodite genders in the dataset.
3. **Excel Pivot Table:** Create a pivot table in Excel to summarize the data. Use the gender count sheet to open in Excel and select the required values from there. Insert a bar chart to visualize the gender count.
4. **Alternative Method:** Highlight the original gender column, select Ideas, and create a count by gender chart.

### Task 2: Adjusting the Gender Count Sheet

- **Objective:** Adjust the gender count sheet to show only the number of male, female, and hermaphrodite genders.

**Steps:**

1. **Select the required data:** Highlight the gender count sheet. Under the menu bar, select Ideas and create a count by gender chart.
2. **Adjust the title:** To change the orientation to vertical, go to Menu -> Insert -> Chart -> Bar.
3. **Color Adjustment:** Go to Menu -> Chart Design and find Adjust Colors!

**Note:** If you'd like to publish your graph on Tableau Public, you can save it through there. Additional chart settings can be further adjusted from the Marks Menu. Try out selecting different names for the chart to edit the names.
### Histograms in R

Histograms are a useful way to visualize the distribution of data. In this section, we will learn how to create histograms in R using both base R and ggplot2.

#### Base R

Histograms in base R can be created using the `hist()` function. The code below demonstrates how to create a histogram for the `height` variable in the `starwars` dataset.

```r
hist(starwars$height)
```

#### ggplot2

ggplot2 is a powerful and flexible data visualization package in R. It uses a grammar of graphics to create complex and aesthetically pleasing visualizations. Here's how you can create a histogram using ggplot2:

```r
ggplot(starwars, aes(x=height)) + geom_histogram(color=)
```

You can adjust colors, titles, axis labels, etc. the same way as with the bar charts!!

### Example

To change colors, feel free to edit the below code or test out other options below!

### Exercises

Now, we will make it with ggplot. Ggplot works by layering the data and is very customizable in this way!

1. **Click on your calculated field count of heights.**
2. **The easier way…**
3. **You can adjust colors, titles, axis labels, etc. the same way as with the bar charts!!**
4. **Voila!**
5. **Click on the drop down menu Show me (right upper corner) and select Histogram.**

Looking ahead!

To adjust things, including the width of the bins

Now, we will make it with ggplot!!

```r
hist(starwars$height, main = "Character Heights in Star Wars", ylab = "Number of Characters", xlab = "height")
```

```r
ggplot(starwars, aes(x=height)) + geom_histogram(color="blue", fill="white")
```

```r
#using base r
hist(starwars$height)
```

```r
#lets adjust a few things

#now make it with ggplot!!

#change the width of the bins

#add in the titles

#adjust the colors

#add in the titles

```r
ggplot(starwars, aes(x=height)) + geom_histogram(color="blue", fill="white")
```