Worksheet #7

pandas module

1. Using the **calorias.csv file** , answer the following questions:
   1.1. Create a DataFrame with the data from the file
   1.2. View the DataFrame
   1.3. View only the first 5 rows
   1.4. View only the last 5 lines
   1.5. View information about the DataFrame. Which columns have NULL/NaN values?
   1.6. Fill in the NaN of the “Calories” column with the average of that column
   1.7. Calculate the median, maximum, and minimum of the Calories column
   1.8. Calculate pulse for max Calories
   1.9. Calculate the standard deviation of the duration

2. Using the **densidadepop.csv file** , answer the following questions:
   2.1. Create a DataFrame with the data from the file
   2.2. View the first 5 rows and analyze the data.
   2.3. Does the data have NULL/NaN values?
   2.4. Calculate the average of densities in 2001 and 2019
   2.5. Determine the region (Regiao) with the highest density in 2001 and 2019
   2.6. Analyze the 2001 and 2009 densities using a graph
   2.7. Calculate the difference in densities in each region (Regiao) from 2001 to 2019
   2.8. Draw a plot of the determined difference

3. Using the **vendas.csv file** , answer the following questions:
   3.1. Create a DataFrame with the data from the file
   3.2. View the first 7 rows and analyze the data. Check if there are NULL/NaN values and, if they exist, replace them with the mean
   3.3. Create a sales (Vendas) chart
   3.4. Determine the month (Mes), store (Loja), and category (Categoria) with the highest sales
   3.5. Determine the month (Mes), store (Loja), and category (Categoria) with the lowest sales
   3.6. Analyze the impact of a 15% increase in sales (Vendas) (calculate the value of sales with increase, show a graph that compares the values of registered and increased sales)
   3.7. Analyze sales volumes by store (Loja):
      3.7.1. Create a list of store (Loja) names
      3.7.2. Create dataframes for each store (Loja) (use .reset_index() to reset indexes)
      3.7.3. Calculate the mean, median, and standard deviation of sales (Vendas) by store
      3.7.4. Create a list with the sums of sales (Vendas) by store
      3.7.5. Create a line chart of store sales (Vendas), with title, legend (use the list of store names) and titles on the axes.
      3.7.6. Create a bar chart with sums of sales (Vendas) by store (use 3.7.1 and 3.7.3)
   3.8. Analyze sales volume by month (Mes) (repeat 3.7 for months)
   3.9. Analyze sales volume by category (Categoria) (repeat 3.7 for categories)