Pandas Analysis on Iris Dataset

This document demonstrates how to extract 10 insights (grains) from the Iris dataset using the pandas library in Python.

# 1. Load the Dataset

Load the Iris dataset using sklearn and convert it into a pandas DataFrame.

# 2. View First Five Records

Display the first five records of the dataset using `head()`.

# 3. Summary Statistics

Get statistical summaries of all numerical columns using `describe()`.

# 4. Count of Each Species

Count how many samples belong to each species using `value\_counts()`.

# 5. Mean Sepal Length for Each Species

Calculate the average sepal length for each species using `groupby()`.

# 6. Find Max Petal Width

Determine the maximum petal width in the dataset using `max()`.

# 7. Species with Largest Average Petal Length

Identify the species with the highest average petal length.

# 8. Correlation Between Features

Compute the correlation matrix to analyze relationships between features.

# 9. Filter Flowers with Sepal Length > 6.0

Filter and display flowers having sepal length greater than 6.0.

# 10. Create New Column: Petal Area

Add a new column for petal area calculated as petal length × petal width.