

Unit 2.3 Graded Assignment: pandas - average sepal length

Instructions:

Download the Iris dataset from
<https://www.kaggle.com/datasets/uciml/iris>
and write a program that loads the CSV file and answers
what is the average sepal length for each of three iris species.

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Solution:

In this assignment we use pandas to import csv file and extract data of iris and calculate average sepal length of each species I try to solve it with two methods

```
[1]: import pandas as pd
[2]: df = pd.read_csv("../Iris.csv")
[3]: df
```

	Id	Sepal.LengthCm	Sepal.WidthCm	Petal.LengthCm	Petal.WidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa
...
145	146	6.7	3.0	5.2	2.3	Iris-virginica
146	147	6.3	2.5	5.0	1.9	Iris-virginica
147	148	6.5	3.0	5.2	2.0	Iris-virginica
148	149	6.2	3.4	5.4	2.3	Iris-virginica
149	150	5.9	3.0	5.1	1.8	Iris-virginica

150 rows x 6 columns

150 rows x 6 columns

```
[4]: df_Iris_setosa = df[df["Species"]=="Iris-setosa"]
df_Iris_versicolor = df[df["Species"]=="Iris-versicolor"]
df_Iris_virginica = df[df["Species"]=="Iris-virginica"]

[5]: df_Iris_setosa_mean = df_Iris_setosa["SepalLengthCm"].mean()
df_Iris_versicolor_mean = df_Iris_versicolor["SepalLengthCm"].mean()
df_Iris_virginica_mean = df_Iris_virginica["SepalLengthCm"].mean()

[6]: print("The average sepal length of Iris-setosa is = " + str(df_Iris_setosa_mean))
print("The average sepal length of Iris-versicolor is = " + str(df_Iris_versicolor_mean))
print("The average sepal length of Iris-virginica is = " + str(df_Iris_virginica_mean))

The average sepal length of Iris-setosa is = 5.006
The average sepal length of Iris-versicolor is = 5.936
The average sepal length of Iris-virginica is = 6.587999999999998
```

▼ Another method of solve ¶

```
[7]: data=df.groupby("Species")["SepalLengthCm"].mean()
```

```
[8]: data
```

```
[8]: Species
Iris-setosa      5.006
Iris-versicolor  5.936
Iris-virginica   6.588
Name: SepalLengthCm, dtype: float64
```

after adding we got this matrix

before changing array (position 5 and and position 6)

```
[7]: arr
[7]: array([[43,  5,  6, 15],
          [36, 42, 22, 46],
          [20, 26, 29, 39],
          [34, 42, 41, 10],
          [47, 18, 14,  8],
          [40, 48, 46,  6]])

[8]: arr[4]=add_of_1_and_3_row
[9]: arr[4]
[9]: array([63, 31, 35, 54])

[10]: arr[5]=add_of_2_and_4_row
[11]: arr[5]
[11]: array([70, 84, 63, 56])
```

after changing array (position 5 and and position 6)

```
[12]: arr
[12]: array([[43,  5,  6, 15],
          [36, 42, 22, 46],
          [20, 26, 29, 39],
          [34, 42, 41, 10],
          [63, 31, 35, 54],
          [70, 84, 63, 56]])
```

[1]:

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