**Guided Lab - 343.1 - Panda Series**

# Lab Objective:

In this lab, we will demonstrate the Panda Series data structure.

# **Learning Objective:**

By the end of this lab, you will be able to utilize the Panda Series data structure.

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# Introduction:

[**Series**](https://pandas.pydata.org/docs/reference/api/pandas.Series.html#pandas.Series) is a one-dimensional labeled array capable of holding any data type (integers, strings, floating point numbers, Python objects, etc.). The axis labels are collectively referred to as the index. The basic method to create a [**Series**](https://pandas.pydata.org/docs/reference/api/pandas.Series.html#pandas.Series) is to call:

**newSeries = pd.Series (data,index)**

Here, data can be many different things:

* a Python dict.
* an ndarray.
* a scalar value (like 5).

The passed index is a list of axis labels. Thus, this separates into a few cases depending on what data is:

# Example 1: Creating Panda Series from Dictionary

**Series** can be instantiated from dicts:

## Example: 1.1

| import pandas as pd  d = {"b": 1, "a": 0, "c": 2}  pd**.**Series**(**d**)** |
| --- |

b 1

a 0

c 2

dtype: int64

## Example: 1.2

| import pandas as pd  d = {"a": 0.0, "b": 1.0, "c": 2.0}  pd.Series(d) |
| --- |

a 0.0

b 1.0

c 2.0

dtype: float64

## Example: 1.3

If an index is passed, the values in data corresponding to the labels in the index will be pulled out.

| pd.Series(d, index=["b", "c", "d", "a"]) |
| --- |

b 1.0

c 2.0

d NaN

a 0.0

dtype: float64

Note: NaN (not a number) is the standard missing data marker used in pandas.

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# Example 2: Key/Value Objects as Series

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## Example 2.1

| import pandas as pd  calories = {"day1": 420, "day2": 380, "day3": 390}  myvar = pd.Series(calories)  print(myvar) |
| --- |

Note: The keys of the dictionary become the labels.

## Example 2.2

To select only some of the items in the dictionary, use the index argument and specify only the items you want to include in the Series.

Create a Series using only data from "day1" and "day2":

| calories = {"day1": 420, "day2": 380, "day3": 390}  myvar = pd.Series(calories, index = ["day1", "day2"])  print(myvar) |
| --- |

day1 420

day2 380

dtype: int64

# Example 3: Creating Panda Series from Scalar Value

If data is a scalar value, an index must be provided. The value will be repeated to match the length of the index.

| pd.Series(5.0, index=["a", "b", "c", "d", "e"]) |
| --- |

**For Canvas official Team**

| **Instructions for Canvas Assignment** |
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| **Assignment Name: Guided lab - 343.1 - Panda Series**  **Points: 100**  **Assignment Group: Non-graded - Module 343 - Data Analytics with Python**  **Display Grade As: Complete/Incomplete**  **Do not count this assignment towards the final grade: Checked**  **Submission Types: Files Uploads**  **Allowed Attempts: Unlimited**  **Everything else is the default.** |