



Pandas DataFrames

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What is a DataFrame?

A Pandas DataFrame is a 2 dimensional data structure, like a 2 dimensional array, or a table with rows and columns.

Example

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Create a simple Pandas DataFrame:

```
import pandas as pd

data = {
    "calories": [420, 380, 390],
    "duration": [50, 40, 45]
}

#load data into a DataFrame object:
df = pd.DataFrame(data)

print(df)
```

Result



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Locate Row

As you can see from the result above, the DataFrame is like a table with rows and columns.

Pandas use the `loc` attribute to return one or more specified row(s)

Example

Return row 0:

```
#refer to the row index:  
print(df.loc[0])
```

Result

```
calories    420  
duration     50  
Name: 0, dtype: int64
```

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Note: This example returns a Pandas **Series**.



```
#use a list of indexes:  
print(df.loc[[0, 1]])
```

Result

	calories	duration
0	420	50
1	380	40

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Note: When using `[]`, the result is a Pandas **DataFrame**.

Named Indexes



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Example

Add a list of names to give each row a name:

```
import pandas as pd

data = {
    "calories": [420, 380, 390],
    "duration": [50, 40, 45]
}

df = pd.DataFrame(data, index = ["day1", "day2", "day3"])

print(df)
```

Result

	calories	duration
day1	420	50
day2	380	40
day3	390	45

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Locate Named Indexes

Use the named index in the **loc** attribute to return the specified row(s).

Example

Return "day2":



Result

```
calories    380
duration     40
Name: day2, dtype: int64
```

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Load Files Into a DataFrame

If your data sets are stored in a file, Pandas can load them into a DataFrame.

Example

Load a comma separated file (CSV file) into a DataFrame:

```
import pandas as pd

df = pd.read_csv('data.csv')

print(df)
```

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You will learn more about importing files in the next chapters.

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True or False. A DataFrame is like a table with rows and columns.

☐ True

☐ False

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