

Pandas Data Structures



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What is Pandas?

Pandas Is A Data Analysis Package In Python Built On Top Of Numpy

Pandas Is Designed With Data Structures Like Series And DataFrame

Pandas Started As An Open Source Project In 2010



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Series

DataFrame

Index

- A Series is a one-dimensional array-like object

Index	Values
0	A
1	B
2	C
3	D

Index	Values
One	A
Two	B
Three	C
Four	D

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How To Construct Pandas Series?

```
pd.Series(data, index=index)
```

Data: A List

Data: A Dictionary

Data: One Dimensional NumPy Array

Data: A Scalar



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How To Construct Pandas DataFrame?

```
pd.DataFrame(data, columns='column names',  
index='index names')
```

Data: A Single Series Object

Data: A List Of Dictionaries

Data: Dictionary Of Series Objects

Data: Two - Dimensional Numpy Array

Data: A Numpy Structured Array



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How DataFrame Looks

Column	C1	C2	C3	.	.	Cn
Index						
Row 1	1	2	.	.	.	M
Row 2
.
.
Row N	Z	M

(N x M)



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How To Construct Pandas Index Object?

`pd.Index('A list of index values')`

The Index Object Behaves Like An Immutable Array Or Ordered Set

The Index Objects May Contain A Repeated Values

Immutability Makes It Safer To Share Indices

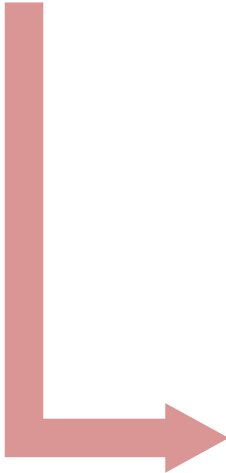
Python's Built-in Set Operations Can Be Performed On Index Objects



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How Index Objects Looks

These Are The New Index Objects Created Explicitly



Column	C1	C	C3	.	.	Cn
Index Object						
One	1	2	.	.	.	M
Two
Three
.
.	Z	M



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Let's Move To The Practical Demo

