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Python Pandas Tutorial

[Pandas – What is DataFrame \(<https://sparkbyexamples.com/tutorials/pandas/pandas-dataframe-tutorial-beginners-guide/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-dataframe-tutorial-beginners-guide/)

[Pandas – What is Series \(<https://sparkbyexamples.com/tutorials/pandas/pandas-series-tutorial-with-examples/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-series-tutorial-with-examples/)

[Pandas – Install on Windows \(<https://sparkbyexamples.com/tutorials/pandas/install-pandas-on-windows/>\)](https://sparkbyexamples.com/tutorials/pandas/install-pandas-on-windows/)

[Pandas – Create DataFrame \(<https://sparkbyexamples.com/tutorials/pandas/pandas-create-dataframe-with-examples/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-create-dataframe-with-examples/)

[Pandas – Select Rows \(<https://sparkbyexamples.com/tutorials/pandas/pandas-select-rows-by-index/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-select-rows-by-index/)

[Pandas – Select Columns \(<https://sparkbyexamples.com/tutorials/pandas/pandas-select-columns-by-name-or-index/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-select-columns-by-name-or-index/)

[Pandas – Query Rows by Value \(<https://sparkbyexamples.com/tutorials/pandas/pandas-dataframe-query-examples/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-dataframe-query-examples/)

[Pandas – Get Cell Value \(<https://sparkbyexamples.com/tutorials/pandas/pandas-get-cell-value-from-dataframe/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-get-cell-value-from-dataframe/)

[Pandas – Add New Column \(<https://sparkbyexamples.com/tutorials/pandas/pandas-add-column-to-dataframe/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-add-column-to-dataframe/)

[Pandas – Rename Column \(<https://sparkbyexamples.com/tutorials/pandas/pandas-rename-column/>\)](https://sparkbyexamples.com/tutorials/pandas/pandas-rename-column/)

[PySpark \(<https://sparkbyexamples.com/tutorials/pyspark/>\)](https://sparkbyexamples.com/tutorials/pyspark/)

Pandas DataFrame loc[] Syntax and Examples

[Pandas – Python Tutorials \(<https://sparkbyexamples.com/python-tutorials/>\)](https://sparkbyexamples.com/python-tutorials/) - [\(https://sparkbyexamples.com/author/admin/\)](https://sparkbyexamples.com/author/admin/)

[Pandas \(<https://sparkbyexamples.com/category/pandas/>\)](https://sparkbyexamples.com/category/pandas/) / [Python \(<https://sparkbyexamples.com/category/python/>\)](https://sparkbyexamples.com/category/python/)

[Hive \(<https://sparkbyexamples.com/apache-hive-tutorial/>\)](https://sparkbyexamples.com/apache-hive-tutorial/)

[Kafka \(<https://sparkbyexamples.com/apache-kafka-tutorials-with-examples/>\)](https://sparkbyexamples.com/apache-kafka-tutorials-with-examples/) [DataFrame is a two-dimensional tabular data structure with labeled axes. i.e. columns and rows. Selecting columns from DataFrame results in a new DataFrame containing only specified selected columns from the original DataFrame.](https://sparkbyexamples.com/apache-kafka-tutorials-with-examples/)

[H2O.ai \(<https://sparkbyexamples.com/h2o-sparkling-water-tutorial-beginners/>\)](https://sparkbyexamples.com/h2o-sparkling-water-tutorial-beginners/)

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pandas DataFrame loc key Points

- loc is used to select/filter rows and columns by labels.

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[pandas/pandas-rename-column-in-dataframe/](#)

[Pandas – Drop Rows by Label | Index](#)
(<https://sparkbyexamples.com/pandas/pandas-drop-rows-from-dataframe/>)

[Pandas – Drop Columns by Label | Index](#)
(<https://sparkbyexamples.com/pandas/pandas-drop-columns-examples/>)

[Pandas – Drop Rows Based on Column Value](#)
(<https://sparkbyexamples.com/pandas/pandas-delete-rows-based-on-column-value/>)

[Pandas – Cast Column Type](#)
(<https://sparkbyexamples.com/pandas/pandas-change-column-data-type-dttype/>)

[Pandas – Get Row Count](#)
(<https://sparkbyexamples.com/pandas/pandas-get-number-of-rows-examples/>)

[Pandas – Iterate Over Rows](#)
(<https://sparkbyexamples.com/pandas/iterate-over-rows-in-pandas-dataframe/>)

[Pandas – apply\(\) function](#)
(<https://sparkbyexamples.com/pandas/pandas-apply-function-usage-examples/>)

[Pandas – Group By Explained](#)
(<https://sparkbyexamples.com/pandas/pandas-groupby-explained-with-examples/>)

[Pandas – Get Column Names as List](#)
(<https://sparkbyexamples.com/pandas/pandas-get-column-names/>)

[Pandas – Shuffle DataFrame Rows](#)
(<https://sparkbyexamples.com/pandas/pandas-shuffle-rows-examples/>)

- When using to select rows, you need to provide row indices label.
- It also provides a way to select rows and columns between ranges, every alternate e.t.c

[pandas.iloc\[\]](#)
(<https://sparkbyexamples.com/pandas/pandas-iloc-usage-with-examples>)
is another property of DataFrame that is used to operate on column position and row indices. For a better understanding of these two learn the differences and similarities between [pandas loc\[\]](#) vs [iloc\[\]](#)
(<https://sparkbyexamples.com/pandas/pandas-difference-between-loc-vs-iloc-in-dataframe>)

1.

pandas.DataFrame.loc[]

Syntax & Usage

loc is used to select rows and columns by names/labels of pandas DataFrame. One of the main advantages of DataFrame is its ease of use. You can see this yourself when you use

`pandas.DataFrame.loc[]` attribute to select or filter DataFrame rows or columns. This is mostly used attribute in pandas DataFrame.

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[Pandas – Join DataFrames](https://sparkbyexamples.com/pandas/pandas-join-explained-with-examples/)
(<https://sparkbyexamples.com/pandas/pandas-join-explained-with-examples/>).

[Pandas – Merge DataFrames](https://sparkbyexamples.com/pandas/pandas-merge-dataframes-explained-examples/)
(<https://sparkbyexamples.com/pandas/pandas-merge-dataframes-explained-examples/>).

[Pandas – Concat DataFrames](https://sparkbyexamples.com/pandas/pandas-concat-dataframes-explained/)
(<https://sparkbyexamples.com/pandas/pandas-concat-dataframes-explained/>).

[Pandas – Append DataFrames](https://sparkbyexamples.com/pandas/pandas-append-usage-by-examples/)
(<https://sparkbyexamples.com/pandas/pandas-append-usage-by-examples/>).

[Pandas – Fill NaN with Value](https://sparkbyexamples.com/pandas/pandas-dataframe-fillna-fill-nan-column-values/)
(<https://sparkbyexamples.com/pandas/pandas-dataframe-fillna-fill-nan-column-values/>).

[Pandas – Drop Rows with NaN](https://sparkbyexamples.com/pandas/pandas-dropna-usage-examples/)
(<https://sparkbyexamples.com/pandas/pandas-dropna-usage-examples/>).

Pandas Load & Write Files

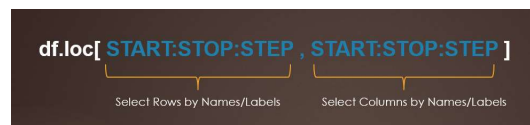
[Pandas – Read JSON](https://sparkbyexamples.com/pandas/pandas-read-json-with-examples/)
(<https://sparkbyexamples.com/pandas/pandas-read-json-with-examples/>).

[Pandas – Read CSV](https://sparkbyexamples.com/pandas/pandas-read-csv-examples/)
(<https://sparkbyexamples.com/pandas/pandas-read-csv-examples/>).

[Pandas – Write to CSV](https://sparkbyexamples.com/pandas/pandas-write-dataframe-to-csv-file/)
(<https://sparkbyexamples.com/pandas/pandas-write-dataframe-to-csv-file/>).

[Pandas – Read Excel](https://sparkbyexamples.com/pandas/pandas-read-excel-with-examples/)
(<https://sparkbyexamples.com/pandas/pandas-read-excel-with-examples/>).

[Pandas – Write to Excel](https://sparkbyexamples.com/pandas/pandas-write-excel/)
(<https://sparkbyexamples.com/pandas/pandas-write-excel/>).



pandas loc[]

- START is the name of the row/column label
- STOP is the name of the last row/column label to take, and
- STEP as the number of indices to advance after each extraction

Key points

- By not providing a start row/column, loc[] selects from the beginning.
- By not providing stop, loc[] selects all rows/columns from the start label.
- Providing both start and stop, selects all rows/columns in between

Let's create a DataFrame and explore how to use pandas loc[].

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[Pandas – Read Text \(https://sparkbyexamples.com/pandas/pandas-read-text-into-dataframe/\)](#)

[Pandas – Read TSV \(https://sparkbyexamples.com/pandas/pandas-read-tsv-into-dataframe/\)](#)

Pandas Functions Usage

[pandas – Index \(https://sparkbyexamples.com/pandas/pandas-index-explained-with-examples/\)](#)

[pandas – MultiIndex \(https://sparkbyexamples.com/pandas/pandas-multiindex-dataframe-examples/\)](#)

[pandas – loc\[\] \(https://sparkbyexamples.com/pandas/pandas-dataframe-loc/\)](#)

[pandas – iloc\[\] \(https://sparkbyexamples.com/pandas/pandas-iloc-usage-with-examples/\)](#)

[pandas – filter\(\) \(https://sparkbyexamples.com/pandas/pandas-dataframe-filter/\)](#)

[pandas – where\(\) \(https://sparkbyexamples.com/pandas/pandas-dataframe-where-examples/\)](#)

[pandas – query\(\) \(https://sparkbyexamples.com/pandas/pandas-dataframe-query-examples/\)](#)

[pandas – apply\(\) \(https://sparkbyexamples.com/pandas/pandas-apply-function-usage-examples/\)](#)

[pandas – map\(\) \(https://sparkbyexamples.com/](#)

```
import pandas as pd
technologies = {
    'Courses': ["Spark", "PySpark", "Hadoop"],
    'Fee' : [20000, 25000, 26000],
    'Duration': ['30day', '40days', '35days'],
    'Discount': [1000, 2300, 1200]
}
index_labels=['r1', 'r2', 'r3', 'r4', 'r5']
df = pd.DataFrame(technologies, index=index_labels)
print(df)
```

Outputs

#r1	Spark	20000	30day
#r2	PySpark	25000	40days
#r3	Hadoop	26000	35days
#r4	Python	22000	40days
#r5	pandas	24000	60days

	loc[] - By Label
Select Single Row	df.loc['r2']
Select Single Column	df.loc[:, "Courses"]
Select Multiple Rows	df.loc[['r2','r3']]
Select Multiple Columns	df.loc[:, ["Courses","Fee"]]
Select Rows Range	df.loc['r1':'r4']
Select Columns Range	df.loc[:, 'Fee':'Discount']
Select Alternate Rows	df.loc['r1':'r4':1]
Select Alternate Columns	df.loc[:, 'Fee':'Discount':1]
Using Condition	df.loc[df['Fee'] >= 24000]
Using Lambda Function	df.loc[lamba x: x[3]]

pandas DataFrame loc[] usage

2. Select Single Row & Column By Label using loc[]

By using pandas loc[] you can select the rows and columns by name. This also supports selecting multiple rows and columns, records between two rows, between two columns e.t.c

The below example demonstrates how to select row by label.

Alternatively, you can also [select rows using DataFrame.query\(\)](#)

[pandas/pandas-map-function-explained/](https://sparkbyexamples.com/pandas/pandas-map-function-explained/)).

[pandas – replace\(\)](https://sparkbyexamples.com/pandas/pandas-replace-by-examples/).
(<https://sparkbyexamples.com/pandas/pandas-replace-by-examples/>).

[pandas – fillna\(\)](https://sparkbyexamples.com/pandas/pandas-dataframe-fillna-fill-nan-column-values/).
(<https://sparkbyexamples.com/pandas/pandas-dataframe-fillna-fill-nan-column-values/>).

[pandas – dropna\(\)](https://sparkbyexamples.com/pandas/pandas-dropna-usage-examples/).
(<https://sparkbyexamples.com/pandas/pandas-dropna-usage-examples/>).

[pandas – append\(\)](https://sparkbyexamples.com/pandas/pandas-append-usage-by-examples/).
(<https://sparkbyexamples.com/pandas/pandas-append-usage-by-examples/>).

[pandas – reset_index\(\)](https://sparkbyexamples.com/pandas/pandas-reset-index-examples/).
(<https://sparkbyexamples.com/pandas/pandas-reset-index-examples/>).

[pandas – set_index\(\)](https://sparkbyexamples.com/pandas/pandas-set-index-explained-with-examples/).
(<https://sparkbyexamples.com/pandas/pandas-set-index-explained-with-examples/>).

[pandas – sort_values\(\)](https://sparkbyexamples.com/pandas/pandas-dataframe-sort_values/).
(https://sparkbyexamples.com/pandas/pandas-dataframe-sort_values/).

[pandas – sort_index\(\)](https://sparkbyexamples.com/pandas/pandas-dataframe-sort_index/).
(https://sparkbyexamples.com/pandas/pandas-dataframe-sort_index/).

[pandas – drop\(\)](https://sparkbyexamples.com/pandas/pandas-drop-columns-examples/).
(<https://sparkbyexamples.com/pandas/pandas-drop-columns-examples/>).

[pandas – mean\(\)](https://sparkbyexamples.com/pandas/pandas-dataframe-mean-examples/).
(<https://sparkbyexamples.com/pandas/pandas-dataframe-mean-examples/>).

[pandas – drop_duplicates\(\)](https://sparkbyexamples.com/pandas/pandas-dataframe-drop_duplicates/).
(https://sparkbyexamples.com/pandas/pandas-dataframe-drop_duplicates/).

(<https://sparkbyexamples.com/pandas/pandas-filter-rows-from-dataframe-query/>) method

Select Single Row by Label
print(df.loc['r2']) # Outputs #Courses
PySpark #Fee 25000 #Duration
40days #Discount 2300 #Name: r2,
dtype: object
In order to select column by label

```
# Select Single Column by label  
print(df.loc[:, "Courses"])
```

```
#Outputs  
#    Courses  
#r1    Spark  
#r2  PySpark  
#r3   Hadoop  
#r4   Python  
#r5   pandas
```

3. Select Multiple Rows & Columns

Now, let's see how to select multiple rows and columns by labels using `DataFrame.loc[]` property

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[pandas – rolling\(\).
\(https://sparkbyexamples.com/pandas/pandas-rolling-mean-average-sum/\).](https://sparkbyexamples.com/pandas/pandas-rolling-mean-average-sum/)

[pandas – corr\(\).
\(https://sparkbyexamples.com/pandas/pandas-correlation-of-columns/\).](https://sparkbyexamples.com/pandas/pandas-correlation-of-columns/)

[pandas – mean\(\).
\(https://sparkbyexamples.com/pandas/pandas-dataframe-mean-examples/\).](https://sparkbyexamples.com/pandas/pandas-dataframe-mean-examples/)

[pandas – groupby\(\).
\(https://sparkbyexamples.com/pandas/pandas-groupby-explained-with-examples/\).](https://sparkbyexamples.com/pandas/pandas-groupby-explained-with-examples/)

[pandas – isin\(\).
\(https://sparkbyexamples.com/pandas/pandas-isin-explained-with-examples/\).](https://sparkbyexamples.com/pandas/pandas-isin-explained-with-examples/)

[pandas – astype\(\).
\(https://sparkbyexamples.com/pandas/pandas-dataframe-astype-examples/\).](https://sparkbyexamples.com/pandas/pandas-dataframe-astype-examples/)

[pandas – to_datetime\(\).
\(https://sparkbyexamples.com/pandas/pandas-to_datetime-examples/\).](https://sparkbyexamples.com/pandas/pandas-to_datetime-examples/)

[pandas – head\(\) – Returns Top N Rows
\(https://sparkbyexamples.com/pandas/pandas-head-returns-top-n-rows/\).](https://sparkbyexamples.com/pandas/pandas-head-returns-top-n-rows/)

Pandas Most Used Examples

[Pandas – Create DataFrame From Dict \(Dictionary\).
\(https://sparkbyexamples.com/pandas/pandas-create-dataframe-from-dict-dictionary/\).](https://sparkbyexamples.com/pandas/pandas-create-dataframe-from-dict-dictionary/)

[Pandas – Replace NaN with Blank/Empty String.
\(https://sparkbyexamples.com/pandas/pandas-replace-nan-with-blank-empty-string/\).](https://sparkbyexamples.com/pandas/pandas-replace-nan-with-blank-empty-string/)

```
# Select Multiple Rows by Label
print(df.loc[['r2','r3']])

# Outputs
#      Courses      Fee Duration
#r2  PySpark   25000    40days
#r3   Hadoop   26000    35days
```

Similarly to [select multiple columns from pandas DataFrame
\(https://sparkbyexamples.com/pandas/pandas-select-dataframe-columns-by-label-or-index/\)](https://sparkbyexamples.com/pandas/pandas-select-dataframe-columns-by-label-or-index/).

```
# Select Multiple Columns by Label
print(df.loc[:, ["Courses", "Fee"]])

# Outputs
#      Courses      Fee
#r1     Spark   20000
#r2  PySpark   25000
#r3   Hadoop   26000
#r4   Python   22000
#r5   pandas   24000
```

4. Select Between Two Rows or Columns

[Pandas – Replace NaN with Blank/Empty String.
\(https://sparkbyexamples.com/pandas/pandas-replace-nan-with-blank-empty-string/\).](https://sparkbyexamples.com/pandas/pandas-replace-nan-with-blank-empty-string/)

[Pandas – Replace NaN with Blank/Empty String.
\(https://sparkbyexamples.com/pandas/pandas-replace-nan-with-blank-empty-string/\).](https://sparkbyexamples.com/pandas/pandas-replace-nan-with-blank-empty-string/)

[Pandas – Replace NaN with Blank/Empty String.
\(https://sparkbyexamples.com/pandas/pandas-replace-nan-with-blank-empty-string/\).](https://sparkbyexamples.com/pandas/pandas-replace-nan-with-blank-empty-string/)

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[Pandas – Replace NaN Values with Zero in a Column](https://sparkbyexamples.com/pandas/pandas-replace-nan-values-by-zero-in-a-column/)
(<https://sparkbyexamples.com/pandas/pandas-replace-nan-values-by-zero-in-a-column/>)

[Pandas – Change Column Data Type On DataFrame](https://sparkbyexamples.com/pandas/pandas-change-column-data-type-dtype/)
(<https://sparkbyexamples.com/pandas/pandas-change-column-data-type-dtype/>)

[Pandas – Select Rows Based on Column Values](https://sparkbyexamples.com/pandas/pandas-select-dataframe-rows-based-on-column-values/)
(<https://sparkbyexamples.com/pandas/pandas-select-dataframe-rows-based-on-column-values/>)

[Pandas – Delete Rows Based on Column Value](https://sparkbyexamples.com/pandas/pandas-delete-rows-based-on-column-value/)
(<https://sparkbyexamples.com/pandas/pandas-delete-rows-based-on-column-value/>)

[Pandas – How to Change Position of a Column](https://sparkbyexamples.com/pandas/pandas-change-position-of-a-column/)
(<https://sparkbyexamples.com/pandas/pandas-change-position-of-a-column/>)

[Pandas – Append a List as a Row to DataFrame](https://sparkbyexamples.com/pandas/pandas-append-list-as-a-row-to-dataframe/)
(<https://sparkbyexamples.com/pandas/pandas-append-list-as-a-row-to-dataframe/>)

[Pandas – Filter by Column Value](https://sparkbyexamples.com/pandas/pandas-filter-by-column-value/)
(<https://sparkbyexamples.com/pandas/pandas-filter-by-column-value/>)

[Pandas – Convert Single or All Columns To String Type?](https://sparkbyexamples.com/pandas/pandas-convert-columns-to-string-type/)
(<https://sparkbyexamples.com/pandas/pandas-convert-columns-to-string-type/>)

[Pandas Get Count of Each Row of DataFrame](https://sparkbyexamples.com/pandas/pandas-get-count-each-dataframe-row/)
(<https://sparkbyexamples.com/pandas/pandas-get-count-each-dataframe-row/>)

[Pandas – Difference Between loc and iloc in DataFrame](https://sparkbyexamples.com/pandas/pandas-difference-between-loc-and-iloc-in-dataframe/)
(<https://sparkbyexamples.com/pandas/pandas-difference-between-loc-and-iloc-in-dataframe/>)

loc[] also supports rows and columns by range. For example all items between two rows/columns. all items starting from e.t.c. The below example selects rows in between r1 and r4.

```
# Select Rows Between two Indices
# Includes both r1 and r4 rows
print(df.loc['r1':'r4'])
```

```
# Outputs
#      Courses    Fee Duration
#r1    Spark  20000    30day
#r2  PySpark  25000    40days
#r3   Hadoop  26000    35days
#r4   Python  22000    40days
```

To select between two column names. The below example selects all columns between Fee and Discount column labels.

```
# Select Columns between two indices
# Includes both 'Fee' and 'Discount'
print(df.loc[:, 'Fee': 'Discount'])
```

```
# Outputs
#      Fee Duration  Discount
#r1  20000    30day     1000
#r2  25000    40days     2300
#r3  26000    35days     1200
#r4  22000    40days     2500
#r5  24000    60days     2000
```

5. Select Alternate Rows or Columns

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[pandas/pandas-difference-between-loc-vs-iloc-in-dataframe/](#).

[Pandas – Replace substring in DataFrame](#)
(<https://sparkbyexamples.com/pandas/pandas-replace-substring-in-dataframe/>).

[Pandas.groupby\(\) and sum\(\) With Examples](#)
(<https://sparkbyexamples.com/pandas/pandas-groupby-sum-examples/>).

[Pandas – Change the Order of DataFrame Columns](#)
(<https://sparkbyexamples.com/pandas/pandas-change-the-order-of-columns/>).

[pandas – Find Installed Version?](#)
(<https://sparkbyexamples.com/pandas/find-pandas-installed-version-and-dependencies-version/>).

[Upgrade Pandas Version to Latest or Specific Version](#)
(<https://sparkbyexamples.com/pandas/upgrade-pandas-version-to-latest-or-specific-version/>).

[Pandas – How to Combine Two Series into a DataFrame](#)
(<https://sparkbyexamples.com/pandas/pandas-combine-two-series-into-dataframe/>).

[Pandas – Remap Values in Column with a Dict](#)
(<https://sparkbyexamples.com/pandas/pandas-remap-values-in-column-with-a-dictionary-dict/>).

[Pandas – Get Column Names from DataFrame](#)
(<https://sparkbyexamples.com/pandas/pandas-get-column-names/>).

[Pandas – Check If DataFrame is Empty](#)
(<https://sparkbyexamples.com/pandas/pandas-check-if-dataframe-is-empty/>).

Similarly, by using ranges you can also select every alternate row from DataFrame.

```
# Select Alternate rows By index range
print(df.loc['r1':'r4':2])

# Outputs
#   Courses  Fee Duration
#r1   Spark 20000    30day
#r3   Hadoop 26000    35days
```

To select alternate columns use

```
# Select Alternate Columns by column range
print(df.loc[:, 'Fee': 'Discount'])

# Output
#      Fee  Discount
#r1  20000      1000
#r2  25000      2300
#r3  26000      1200
#r4  22000      2500
#r5  24000      2000
```

6. Using Conditions with pandas loc

By using [loc](#) select DataFrame rows with conditions

(<https://sparkbyexamples.com/pandas/pandas-loc-multiple-conditions/>).

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[pandas/pandas-check-whether-dataframe-is-empty/](#)

[Pandas – Select All Columns Except One Column](#)

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```
# Using Conditions
print(df.loc[df['Fee'] >= 24000])

# Output
#      Courses    Fee Duration
#r2   PySpark  25000   40days
#r3    Hadoop  26000   35days
#r5    pandas  24000   60days
```

7. Complete Examples of pandas DataFrame loc

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```

import pandas as pd
technologies = {
    'Courses': ["Spark", "PySpark", "Big Data"],
    'Fee' : [20000, 25000, 26000],
    'Duration': ['30day', '40day', '50day'],
    'Discount': [1000, 2300, 1200]
}
index_labels=['r1', 'r2', 'r3', 'r4']
df = pd.DataFrame(technologies, index=index_labels)
print(df)

# Select single Row
print(df.loc['r2'])

# Select Single Column by label
print(df.loc[:, "Courses"])

# Select Multiple Rows by Label
print(df.loc[['r2', 'r3']])

# Select Multiple Columns by label
print(df.loc[:, ["Courses", "Fee"]])

# Select Rows Between two Index Labels
# Includes both r1 and r4 row
print(df.loc['r1':'r4'])

# Select Columns between two Index Labels
# Includes both 'Fee' and 'Discount'
print(df.loc[:, 'Fee': 'Discount'])

# Select Alternate rows By index
print(df.loc['r1':'r4':2])

# Select Alternate Columns by label
print(df.loc[:, 'Fee': 'Discount'])

# Using Conditions
print(df.loc[df['Fee'] >= 24000])

```

Conclusion

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In this article, you have learned the syntax, usage, and examples of pandas DataFrame loc property. DataFrame.loc[] is **label-based to select rows and/or columns** in pandas. It accepts single label, multiple labels from the list, by a range (between two indexes labels), and many more.

Happy Learning !!

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- [Pandas Shuffle DataFrame Rows Examples](https://sparkbyexamples.com/pandas/pandas-shuffle-rows-examples/)
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- ✦ Select Alternate Rows or Columns
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