DECODING
DATA SCIENCE

ILOC AND LOC IN PANDA

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√ Loc allows you to select data based on the label or name of the row or column, while
iloc uses the number or index of the row or column.

√ Understanding the difference between these two methods is crucial for effectively working with data in Python.

√ Whether you're a seasoned data analyst or just starting out, understanding how to use
loc and ilocwill give you the skills you need to effectively analyze data in Python.

LOC

THE LOC() FUNCTION IS LABEL BASED DATA SELECTING METHOD WHICH MEANS THAT WE HAVE TO PASS THE NAME OF THE ROW OR COLUMN WHICH WE WANT TO SELECT.

```
new_data=dataset_name.loc[dataset_name['Column Name']=='Filter_condition']
```

ILOC

THE ILOC() FUNCTION IS AN INDEXED-BASED SELECTING METHOD WHICH MEANS THAT WE HAVE TO PASS AN INTEGER INDEX IN THE METHOD TO SELECT A SPECIFIC ROW/COLUMN.

```
# selecting 0th, 2th, 4th, and 7th index rows
display(dataset_name.iloc[[0, 2, 4, 7]])
```

Python Pandas Selections and Indexing

.iloc selections - position based selection

data.iloc[<row selection], <column selection>]

Integer list of rows: [0,1,2]
Slice of rows: [4:7]
Single values: 1

Integer list of columns: [0,1,2]
Slice of columns: [4:7]
Single column selections: 1

loc selections - position based selection

data.loc[<row selection], <column selection>]

Index/Label value: 'john'
List of labels: ['john', 'sarah']
Logical/Boolean index: data['age'] == 10

Named column: 'first_name'
List of column names: ['first_name', 'age']
Slice of columns: 'first_name':'address'

	loc[] - By Label	iloc[] - By Index
Select Single Row	df.loc['r2']	df.iloc[1]
Select Single Column	df.loc[:, "Courses"]	df.iloc[:, 0]
Select Multiple Rows	df.loc[['r2','r3']]	df.iloc[[1,2]]
Select Multiple Columns	df.loc[:, ["Courses","Fee"]]	df.iloc[:, [0,1]]
Select Rows Range	df.loc['r1':'r4']	df.iloc[0:4]
Select Columns Range	df.loc[:,'Fee':'Discount']	df.iloc[:,1:4]
Select Alternate Rows	df.loc['r1':'r4':1]	df.iloc[0:4:1]
Select Alternate Columns	df.loc[:,'Fee':'Discount':1]	df.iloc[:,1:4:1]
Using Condition	df.loc[df['Fee'] >= 24000]	df.iloc[list(df['Fee'] >= 24000)]
Using Lambda Function	df.loc[lambda x: x[3]]	df.iloc[lambda x: x[3]]

Difference Between pandas DataFrame loc vs iloc

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