In [1]:
```
# let us import the Pandas Library
import pandas as pd
```

In [6]:
```
#Create a dataframe to display the result
x = {'Name': ['David', 'Samuel', 'Terry', 'Evan'], 'Age': [27, 24, 22, 32],
     'Country':['UK', 'Canada','China', 'USA'],
     'Course':['Python','Data Structures', 'Machine Learning', 'Web Development'],
     'Marks': [85, 72, 89, 76]}
df = pd.DataFrame(x)
df
```

Out[6]:

	Name	Age	Country	Course	Marks
0	David	27	UK	Python	85
1	Samuel	24	Canada	Data Structures	72
2	Terry	22	China	Machine Learning	89
3	Evan	32	USA	Web Development	76

In [9]:
```
#Retrieve the Marks column and assign it to a variable b
b = df [['Marks']]
b
```

Out[9]:

	Marks
0	85
1	72
2	89
3	76

In [10]:
```
# Retrieve the Country and Course columns and assign it to a variable c
c =df [['Country', 'Course']]
c
```

Out[10]:

	Country	Course
0	UK	Python
1	Canada	Data Structures
2	China	Machine Learning
3	USA	Web Development

In [11]:
```
#To view the column as a series, just use one bracket:
# Get the Name column as a series Object

x = df['Name']
x
```

Out[11]:
```
0      David
1     Samuel
2      Terry
3       Evan
Name: Name, dtype: object
```

In [12]:
```
#check the type of x
type(x)
```

Out[12]:
```
pandas.core.series.Series
```

In [16]:
```
#loc() and iloc() functions
# Access the value on the first row and the first column
df.iloc [0,0]
```

Out[16]:
```
'David'
```

In [17]:
```
# Access the value on the first row and the third column
df.iloc[0,2]
```

Out[17]:
```
'UK'
```

In [23]:
```
# Access the column using the name
df.loc[0,'Age']
```

Out[23]:
```
27
```

In [24]:
```
#Let us create a new dataframe called 'df1' and assign 'df' to it. Now, let us set the "Name" column as an index column using the method set_index().
df1=df
df1=df1.set_index("Name")
df1
```

Out[24]:

Name	Age	Country	Course	Marks
David	27	UK	Python	85
Samuel	24	Canada	Data Structures	72
Terry	22	China	Machine Learning	89
Evan	32	USA	Web Development	76

In [26]:
```
#To display the first 5 rows of new dataframe
df1.head(5)
```

Out[26]:

Name	Age	Country	Course	Marks
David	27	UK	Python	85
Samuel	24	Canada	Data Structures	72
Terry	22	China	Machine Learning	89
Evan	32	USA	Web Development	76

In [25]:
```
#Let us create a new dataframe called 'df2' and assign 'df' to it. Now, let us set the "Age" column as an index column using the method set_index()

df2 = df
df2 = df2.set_index("Age")
df2
```

Out[25]:

Age	Name	Country	Course	Marks
27	David	UK	Python	85
24	Samuel	Canada	Data Structures	72
22	Terry	China	Machine Learning	89
32	Evan	USA	Web Development	76

In [38]:
```
#To display the first 2 rows of new dataframe
df2.head(2)
```

Out[38]:

Age	Name	Country	Course	Marks
27	David	UK	Python	85
24	Samuel	Canada	Data Structures	72

In [105…
```
# let us do the slicing  dataframe df

df.iloc[0:2, 1:4]
# 0:2, 0 is the index, 2 is the range....1:4 represents the coulumns numbers ie. Age -Coulmn 1 till Course - Coulmn 4
```

Out[105]:

	Age	Country	Course
0	27	UK	Python
1	24	Canada	Data Structures

In [106…
```
#let us do the slicing using loc() function on old dataframe df where index column is having labels as 0,1,2
df.loc[0:2, 'Age': 'Course']
```

Out[106]:

	Age	Country	Course
0	27	UK	Python
1	24	Canada	Data Structures
2	22	China	Machine Learning

In [93]:
```
#let us do the slicing using loc() function on new dataframe df1 where index column is Name having labels: Samuel, Terry, Evan

df1.loc['Samuel': 'Evan']
```

Out[93]:

Name	Age	Country	Course	Marks
Samuel	24	Canada	Data Structures	72
Terry	22	China	Machine Learning	89
Evan	32	USA	Web Development	76

In [98]:
```
#let us do the slicing using loc() function on new dataframe df1 where index column is Name having labels: Samuel, Terry, Evan

df1.loc['Samuel': 'Evan']
```

Out[98]:

Name	Age	Country	Course	Marks
Samuel	24	Canada	Data Structures	72
Terry	22	China	Machine Learning	89
Evan	32	USA	Web Development	76

In [104…
```
#using loc() function, do slicing on old dataframe df to retrieve the with columns Country, Course and Marks of index column having labels as 2,3
df.loc[2:3, 'Country': 'Marks']
```

Out[104]:

	Country	Course	Marks
2	China	Machine Learning	89
3	USA	Web Development	76

In [ ]:
```

```