

Problem 1: Create a dataframe to display the result as below:

	Student	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

Solution:

```
import pandas as pd
info = {'Student':['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']}
data = pd.DataFrame(info)
print(data)
```

Problem 2: Retrieve the Marks column and assign it to a variable b

Solution:

```
import pandas as pd
info = {'Student':['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']}
df1 = pd.DataFrame(info)
mark = df1['Marks']
print(mark)
```

Output:

```
0    85
1    72
2    89
3    76
```

Problem 3: Retrieve the Country and Course columns and assign it to a variable c

Solution:

```
import pandas as pd
a = {'Student':['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']}
df1 = pd.DataFrame(a)
x = df1[['Country', 'Course']]
print(x)
```

Output:

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

Problem 4: Use the loc() function, to get the Department of Jane in the newly created dataframe df2.

Solution:

```
import pandas as pd
data = {
    'Name': ['John', 'Jane', 'Tom', 'Anna'],
    'Age': [28, 34, 29, 24],
    'Department': ['HR', 'Finance', 'IT', 'Marketing']
}
df2 = pd.DataFrame(data)

jane_department = df2.loc[df2['Name'] == 'Jane', 'Department'].values[0]
print(f"The Department of Jane is: {jane_department}")
```

Output:

The Department of Jane is: Finance

Practics 5: using loc() function, do slicing on old dataframe df to retrieve the Name, ID and department of index column having labels as 2,3

Solution :

```
import pandas as pd
# Creating a new DataFrame df with necessary columns
data = {
    'Name': ['John', 'Jane', 'Tom', 'Anna'],
    'ID': [1, 2, 3, 4],
    'Department': ['HR', 'Finance', 'IT', 'Markettnng']
}

df = pd.DataFrame(data)

# Using loc() function to slice the DataFrame
info = df.loc[[ 2, 3], ['Name', 'ID', 'Department']]
print(info)
```

Output:

	Name	ID	Department
2	Tom	3	IT
3	Anna	4	Marketing