Pandas Joining and Merging DataFrame

In [2]:

```python
import pandas as pd
```

In [6]:

```python
student_data1 = {'student_id':['S1','S2','S3','S4','S5'],
                'name':['Danniella Fenton',' Ryder Storey',' Bryce Jensen','Ed Bernal',' Kwame
Morin'],
                'marks':[200,210,190,222,199]}
data = pd.DataFrame(student_data1)
data.head()
```

Out[6]:

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222
4	S5	Kwame Morin	199

In [7]:

```python
student_data2 = {'student_id':['S1','S2','S3','S4','S5'],
                'name':['Raju',' Ram',' Jensen','Satish','Murali'],
                'marks':[201,200,190,222,199]}
data1 = pd.DataFrame(student_data2)
data1.head()
```

Out[7]:

	student_id	name	marks
0	S1	Raju	201
1	S2	Ram	200
2	S3	Jensen	190
3	S4	Satish	222
4	S5	Murali	199

Write a Pandas program to join the two given dataframes along rows and assign all data.

In [10]:

```python
result_data = pd.concat([data,data1])
result_data
```

Out[10]:

	student_id	name	marks
0	S1	Danniella Fenton	200
1	S2	Ryder Storey	210
2	S3	Bryce Jensen	190
3	S4	Ed Bernal	222

	student_id	name	marks
4		Kwame Morie	
0	S1	Raju	201
1	S2	Ram	200
2	S3	Jensen	190
3	S4	Satish	222
4	S5	Murali	199

Write a Pandas program to join the two given dataframes along columns and assign all data

In [11]:

```python
result_data = pd.concat([data,data1],axis=1) # axis= 1 means column wise
result_data
```

Out[11]:

	student_id	name	marks	student_id	name	marks
0	S1	Danniella Fenton	200	S1	Raju	201
1	S2	Ryder Storey	210	S2	Ram	200
2	S3	Bryce Jensen	190	S3	Jensen	190
3	S4	Ed Bernal	222	S4	Satish	222
4	S5	Kwame Morin	199	S5	Murali	199

Write a Pandas program to append rows to an existing DataFrame and display the combined data.

In [14]:

```python
s6 = pd.Series(['S6', 'Scarlette Fisher', 205], index=['student_id', 'name', 'marks'])

result_data_append = result_data.append(s6,ignore_index=True)
result_data_append
```

Out[14]:

	student_id	name	marks	student_id	name	marks
0	S1	Danniella Fenton	200	S1	Raju	201
1	S2	Ryder Storey	210	S2	Ram	200
2	S3	Bryce Jensen	190	S3	Jensen	190
3	S4	Ed Bernal	222	S4	Satish	222
4	S5	Kwame Morin	199	S5	Murali	199
5	S6	Scarlette Fisher	205	S6	Scarlette Fisher	205

Write a Pandas program to join the two given dataframes along rows and merge with another dataframe along the common column id

In [17]:

```python
exam_data = pd.DataFrame({
        'student_id': ['S1', 'S2', 'S3', 'S4', 'S5', 'S7', 'S8', 'S9', 'S10', 'S11', 'S12', 'S13'],
        'exam_id': [23, 45, 12, 67, 21, 55, 33, 14, 56, 83, 88, 12]})
result_data1 = pd.concat([data,data1])

#print(result_data)
merged_data = pd.merge(result_data1,exam_data, on='student_id')
```

```
merged_data = pd.merge(result_data1,exam_data, on= 'student_id')
merged
_data
```

	student_id	name	marks	exam_id
0	S1	Danniella Fenton	200	23
1	S1	Raju	201	23
2	S2	Ryder Storey	210	45
3	S2	Ram	200	45
4	S3	Bryce Jensen	190	12
5	S3	Jensen	190	12
6	S4	Ed Bernal	222	67
7	S4	Satish	222	67
8	S5	Kwame Morin	199	21
9	S5	Murali	199	21

Write a Pandas program to join the two dataframes using the common column of both dataframes.

In [22]:

```
result_data = pd.merge(data,data1,on='student_id')
result_data
```

	student_id	name_x	marks_x	name_y	marks_y
0	S1	Danniella Fenton	200	Raju	201
1	S2	Ryder Storey	210	Ram	200
2	S3	Bryce Jensen	190	Jensen	190
3	S4	Ed Bernal	222	Satish	222
4	S5	Kwame Morin	199	Murali	199

Write a Pandas program to join (left join) the two dataframes using keys from left dataframe only.

In [25]:

```
#Merged data (key from data1)
result_data_left1 = pd.merge(data,data1,how = 'left',on = ['student_id'])
print(result_data_left1)

#Merge data (key from data2)
result_data_left2 = pd.merge(data1,data,how = 'left',on = ['student_id'])
print(result_data_left2)
```

```
  student_id             name_x  marks_x    name_y  marks_y
0         S1  Danniella Fenton      200      Raju      201
1         S2      Ryder Storey      210       Ram      200
2         S3      Bryce Jensen      190    Jensen      190
3         S4         Ed Bernal      222    Satish      222
4         S5       Kwame Morin      199    Murali      199
  student_id  name_x  marks_x             name_y  marks_y
0         S1    Raju      201  Danniella Fenton      200
1         S2     Ram      200      Ryder Storey      210
2         S3  Jensen      190      Bryce Jensen      190
3         S4  Satish      222         Ed Bernal      222
4         S5  Murali      199       Kwame Morin      199
```

Write a Pandas program to join two dataframes using keys from right dataframe only

In [27]:

```python
result_data_right1 = pd.merge(data,data1,how = 'left',on = ['student_id'])
print(result_data_right1)

#Merge data (key from data2)
result_data_right2 = pd.merge(data1,data,how = 'left',on = ['student_id'])
print(result_data_right2)
```

```
  student_id               name_x  marks_x     name_y  marks_y
0         S1  Danniella Fenton      200       Raju      201
1         S2     Ryder Storey      210        Ram      200
2         S3     Bryce Jensen      190     Jensen      190
3         S4        Ed Bernal      222     Satish      222
4         S5     Kwame Morin      199     Murali      199
  student_id  name_x  marks_x               name_y  marks_y
0         S1    Raju      201  Danniella Fenton      200
1         S2     Ram      200     Ryder Storey      210
2         S3  Jensen      190     Bryce Jensen      190
3         S4  Satish      222        Ed Bernal      222
4         S5  Murali      199     Kwame Morin      199
```

In [ ]: