

Assignment No: 0.6 (Pandas)

1. Write a Pandas program to add, subtract, multiple and divide two Pandas Series.
2. Write a Pandas program to convert a dictionary to a Pandas series.
3. Write a Pandas program to convert a NumPy array to a Pandas series.
4. Write a Pandas program to convert a given Series to an array.
5. Write a Pandas program to convert Series of lists to one Series.
6. Write a Pandas program to create a dataframe from a dictionary and display it.
7. Write a Pandas program to get the first 3 rows of a given DataFrame.
8. Write a Pandas program to select the 'name' and 'score' columns from the following DataFrame.

Sample Python dictionary data and list labels:

```
exam_data = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'],
'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19],
'attempts': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],
'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']}
labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']
```

Expected Output:

Select specific columns:

```
name score
a Anastasia 12.5
b Dima 9.0
c Katherine 16.5
... h Laura NaN
i Kevin 8.0
j Jonas 19.0
```

9. Write a Pandas program to select the rows where the score is missing, i.e. is NaN.

Sample Python dictionary data and list labels:

```
exam_data = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'],
'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19],
'attempts': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],
'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']}
labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']
```

Expected Output:

Rows where score is missing:

```
attempts name qualify score
d 3 James no NaN
h 1 Laura no NaN
```

10. Write a Pandas program to append a new row 'k' to data frame with given values for each column. Now delete the new row and return the original DataFrame.

Sample Python dictionary data and list labels:

```
exam_data = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'],
'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19],
'attempts': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],
'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']}
labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']
```

Values for each column will be:

name : "Suresh", score: 15.5, attempts: 1, qualify: "yes", label: "k"

Expected Output:

Append a new row:

Print all records after insert a new record:

attempts name qualify score

a 1 Anastasia yes 12.5

b 3 Dima no 9.0

.....

j 1 Jonas yes 19.0

k 1 Suresh yes 15.5