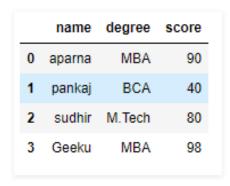
ITERATION ON DATAFRAME ASSIGNMENT

1.Create following given dataframe



- 2. Now apply iterrows() function in order to get a each element of rows.
- 3. Now apply a itertuples() function in order to get tuple for each row.
- 4. Display the following output:

Output:

sudhir M.Tech 80

- 5. Now apply a iteritems() function in order to retrieve an rows of dataframe.
- 6.Create the following dataframe and display the following:

output.

```
Original DataFrame:
    age    name
0    10    Sujeet
1    11    Sameer
2    12    Sumit

Rows iterated using iterrows():
Sujeet 10
Sameer 11
Sumit 12
```

7. Display the following using itertuple()

Output:

```
Original DataFrame:

age name
0 10 Sujeet
1 110 Sameer
2 120 Sumit

Rows iterated using itertuples():
Sujeet 10
Sameer 110
Sumit 120
```

SOLUTIONS

1.

```
'score':[90, 40, 80, 98]}
# creating a dataframe from a dictionary
df = pd.DataFrame(dict)
# iterating over rows using iterrows() function
for i, j in df.iterrows():
   print(i, j)
   print()
import pandas as pd
# dictionary of lists
'score':[90, 40, 80, 98]}
# creating a dataframe from dictionary
df = pd.DataFrame(dict)
# using a itertuples()
for i in df.itertuples():
   print(i)
4.
columns = list(df)
for i in columns:
   # printing the third element of the column
   print (df[i][2])
import pandas as pd
# dictionary of lists
'score':[90, 40, 80, 98]}
# craeting a dataframe from a dictionary
df = pd.DataFrame(dict)
# using iteritems() function to retrieve rows
for key, value in df.iteritems():
   print(key, value)
   print()
import pandas as pd
# list of dicts
input_df = [{'name':'Sujeet', 'age':10},
           {'name':'Sameer', 'age':11},
{'name':'Sumit', 'age':12}]
```

EXTRA QUESTIONS

Q1. What do you mean by Iterating over rows and columns in Pandas DataFrame?

Iteration is a general term for taking each item of something, one after another. Pandas DataFrame consists of rows and columns so, in order to iterate over dataframe, we have to iterate a dataframe like a dictionary. In a dictionary, we iterate over the keys of the object in the same way we have to iterate in dataframe.

Q2. Difference between series and dataframe.

A Pandas Series is one dimensioned whereas a DataFrame is two dimensioned. Therefore, a single column DataFrame can have a name for its single column but a Series cannot have a column name. In fact, each column of a DataFrame can be converted to a series.

	Series		Series			DataFrame		
	apples			oranges			apples	oranges
0	3	+	0	0	=	0	3	0
1	2		1	3		1	2	3
2	0		2	7		2	0	7
3	1		3	2		3	1	2

Q3. What is the difference between series and list in python?

Creating a Pandas Series from Lists. A Series is a one-dimensional labeled array capable of holding any data type (integers, strings, floating point numbers, Python objects, etc.). It has to be remembered that unlike Python lists, a Series will always contain data of the same type.

Q4. Name two dataStructure in Python Pandas.