```python
In [1]:   ################################################################ Pandas Introduction##

In [1]:   import numpy as np
          import pandas as pd

In [2]:   ####################                Creation of Series            ##################

In [20]:  s = pd.Series([1,2,3,4], index=['a', 'b', 'c', 'd'])
          print(s)

          a    1
          b    2
          c    3
          d    4
          dtype: int64

In [18]:  pd.Series((1,2,3,4))

Out[18]:  0    1
          1    2
          2    3
          3    4
          dtype: int64

In [4]:   #####################################  Creation of dataframe    ###############

In [5]:   d=pd.DataFrame(
              {
              'A': 1.0,
              'name': ['vaishali'],
              'class': 12,
              }
          )
          print(d)

               A      name  class
          0  1.0  vaishali     12

In [6]:   d

Out[6]:        A    name   class

          0   1.0  vaishali    12


In [21]:  e= pd.DataFrame(
              {
                  "A": 1.0,
                  "B": pd.Timestamp("20130102"),
                  "C": pd.Series(1, index=list(range(4)), dtype="float32"),
                  "D": np.array([3] * 4, dtype="int32"),
                  "E": pd.Categorical(["test", "train", "test", "train"]),
                  "F": "foo",
              }
```

```
    )
    print(e)
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[21], line 5
      1 e= pd.DataFrame(
      2     {
      3         "A": 1.0,
      4         "B": pd.Timestamp("20130102"),
----> 5         "C": pd.Series(1, index=[a,b,c,d], dtype="float32"),
      6         "D": np.array([3] * 4, dtype="int32"),
      7         "E": pd.Categorical(["test", "train", "test", "train"]),
      8         "F": "foo",
      9     }
     10 )
     11 print(e)

NameError: name 'a' is not defined
```

In [8]:
```
################################## Data Frame iteration ######################
```

In [9]:
```
#### Iterating Over rows using iterrows()
import pandas as pd

data = {'Name': ['Alice', 'Bob', 'Charlie'],
        'Age': [25, 30, 35],
        'City': ['New York', 'San Francisco', 'Los Angeles']}
df = pd.DataFrame(data)

for index, row in df.iterrows():
    print(f"Index: {index}, Name: {row['Name']}, Age: {row['Age']}, City: {row['Cit
```

```
Index: 0, Name: Alice, Age: 25, City: New York
Index: 1, Name: Bob, Age: 30, City: San Francisco
Index: 2, Name: Charlie, Age: 35, City: Los Angeles
```

In [12]:
```
#### Iterating over columns using items()
for column, series in df.items():
    print(f"Column: {column}, Values: {series.values}")
```

```
Column: Name, Values: ['Alice' 'Bob' 'Charlie']
Column: Age, Values: [25 30 35]
Column: City, Values: ['New York' 'San Francisco' 'Los Angeles']
```

In [16]:
```
import pandas as pd
d=pd.DataFrame({ 'A': 1.0,
    'name': ['vaishali'],
    'class': 12,
})
print(d)
```

```
     A     name  class
0  1.0  vaishali     12
```

In [ ]: