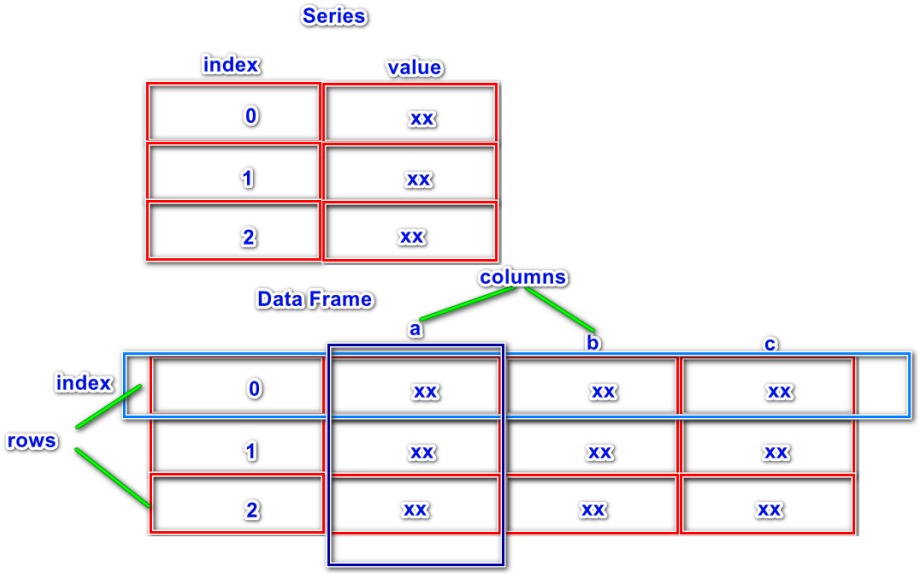
Pandas

1.DataFrame

1.1 DataFrame的介绍

> 是一个表格型的数据结构
>
> 1. 类似于二维列表 多维列表
> 2. 每列数据可以是不同类型
> 3. 索引包括列索引和行索引



1.2 创建DataFrame

1.字典创建

1. 数组,列表或者元祖构成的字典创建DataFrame

```
# 1. 数组,列表或者元祖构成的字典创建DataFrame
import   pandas as pd
import numpy as np
# 使用数组创建
data = {
```

```
        "A":np.arange(9,13),
        "B":np.arange(9,13),
        "C":np.arange(9,13)
}
pd1 = pd.DataFrame(data)
print(pd1)

# 使用列表构成的字典创建
data = {
        "A":[1,2,3,4],
        "B":[5,6,7,8],
        "C":[8,9,0,10]
}
pd1 = pd.DataFrame(data)
print(pd1)

# 使用元组
data = {
        "A":(1,2,3,4),
        "B":(5,6,7,8),
        "C":(8,9,0,10)
}
pd1 = pd.DataFrame(data)
print(pd1)
```

2. Series构建的字典来创建DataFrame

```
import   pandas as pd
data = {
        "AB":pd.Series([1,2,3,4,5]),
        "BC":pd.Series([1,2,3,4,5]),
        "CA":pd.Series([1,2,3,4,5])
}
#  range包头不包尾
pd1 = pd.DataFrame(data,index=range(1,5),columns=["AB","BC","CA"])
print(pd1)
#查看行索引
print(pd1.index)
# 查看列索引
print(pd1.columns)
# 查看values
print(pd1.values)
```

3. 字典构成的字典来创建DataFrame

```
import pandas as   pd
data = {
      "A":{'a':1,"b":2,"c":3},
"C":{'a':4,"b":5,"c":6},
"B":{'a':7,"b":8,"c":9},
}
pd1 = pd.DataFrame(data)
print(pd1)
```

> 注意
>
> 在创建DataFrame时, 外层字典key将成为列索引/列标签,内层字典中的key成行索引

2.列表创建

1. 2D ndarray创建DataFrame

```
import pandas as pd
import numpy as np
data= np.array([[1,2,3],[4,5,6],[7,8,9]])
print(data)
pd1 = pd.DataFrame(data)
print(pd1)
```

2. 字典构成的列表创建DataFrame

```
import pandas as pd

data = [
     {"name":"龙仔","性别":"男","年龄":18},
     {"name": "小龙仔", "性别": "男", "年龄": 18},
     {"name": "宝宝", "性别": "女", "年龄": 18},
]
pd1 = pd.DataFrame(data)
print(pd1)
```

3. Series构成的列表创建DataFrame

```
import pandas as pd

data = [
      pd.Series([1,2,3]),
pd.Series([4,5,6]),
pd.Series([7,8,9]),
]
pd1 = pd.DataFrame(data)
print(pd1)
```