

0.需要用到的数据:

```
data = {'grammer':['python','java','go',np.nan,'python','C','C++'],'score':  
[1,np.nan,np.nan,4,5,7,8]}
```

1.使用字典数据创建DataFrame

	grammer	score
0	python	1.0
1	java	NaN
2	go	NaN
3	NaN	4.0
4	python	5.0
5	C	7.0
6	C++	8.0

2.提取grammer列是"python"的行

	grammer	score
0	python	1.0
4	python	5.0

3.输出df的所有列名

```
['grammer', 'score']
```

4.将列名score修改为popularity

	grammer	popularity
0	python	1.0
1	java	NaN
2	go	NaN
3	NaN	4.0
4	python	5.0
5	C	7.0
6	C++	8.0

5.统计grammer列中每种编程语言出现的次数

grammer	popularity
C	1
C++	1
go	0
java	0
python	2

6.将空值用上下值的平均值填充

	grammer	popularity
0	python	1.0
1	java	2.0
2	go	3.0
3	NaN	4.0
4	python	5.0
5	C	7.0
6	C++	8.0

7.提取popularity中值大于3的行

	grammer	popularity
3	NaN	4.0
4	python	5.0
5	C	7.0
6	C++	8.0

8.按照grammer列进行去除重复值的行

	grammer	popularity
0	python	1.0
1	java	2.0
2	go	3.0
3	NaN	4.0
5	C	7.0
6	C++	8.0

9.计算popularity列平均值

4.285714285714286

10.将grammer列转换成list

```
['python', 'java', 'go', nan, 'python', 'C', 'C++']
```