

# 可视化 1

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- 数据储存在 `data.xlsx` Excel文件中，并将抬头改成英文
- 使用 `python` 的 `matplotlib` 分别绘制了6种图
  - 曲线图
  - 柱状图
  - 直方图
  - 散点图
  - 面积图
  - 饼状图
- [点击查看Visualization\\_1](#)

## 导入包

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import matplotlib
matplotlib.style.use('ggplot')
%matplotlib inline
```

## 导入数据

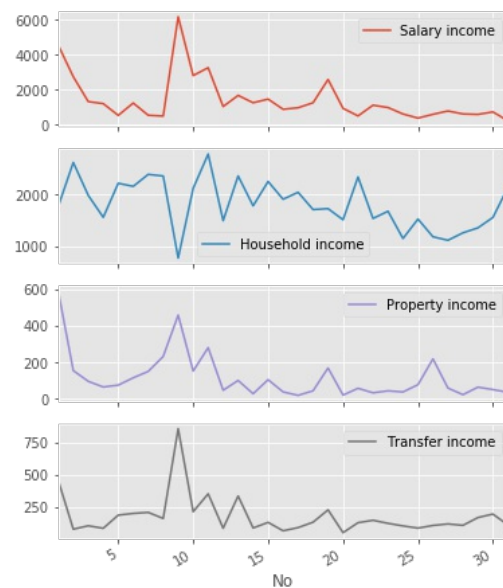
```
data = pd.read_excel('data.xlsx', index_col=0)
columns = data.columns
```

## 曲线图（合并和分开）

```
data.plot()
plt.show()
data.plot(subplots=True, figsize=(6,8))
plt.show
```



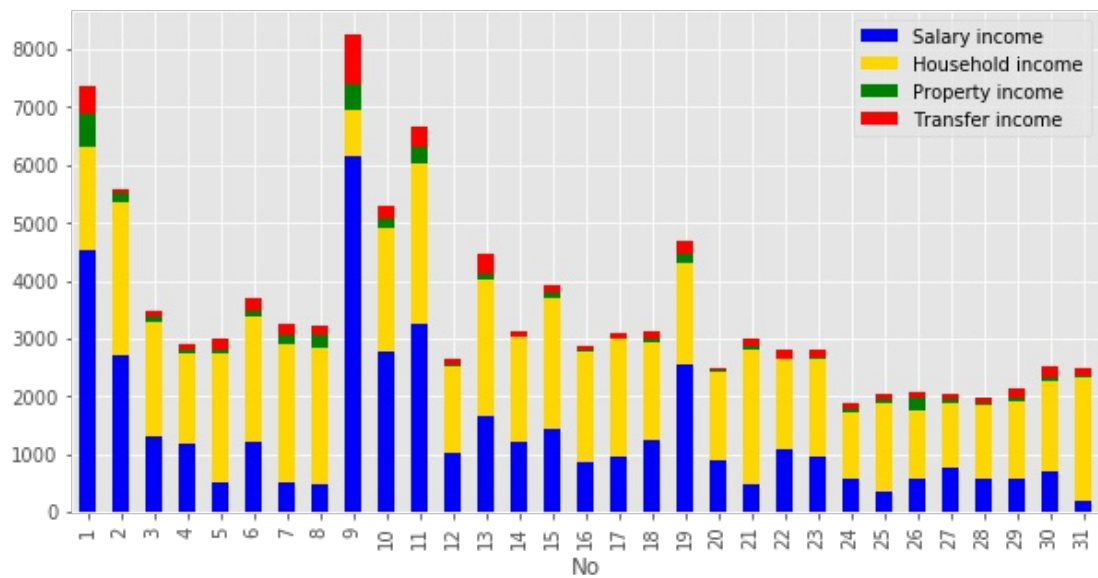
```
<function matplotlib.pyplot.show>
```



## 柱状图

```
data.plot(kind='bar', stacked=True, color=['blue','gold', 'green', 'red'])
plt.show()
```

```
data.plot(kind='bar', subplots=True, figsize=(10,10))
plt.show()
```

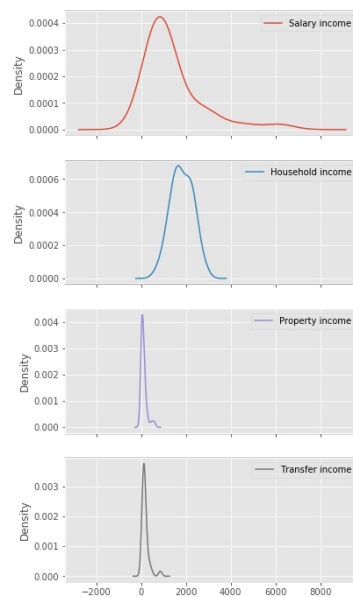
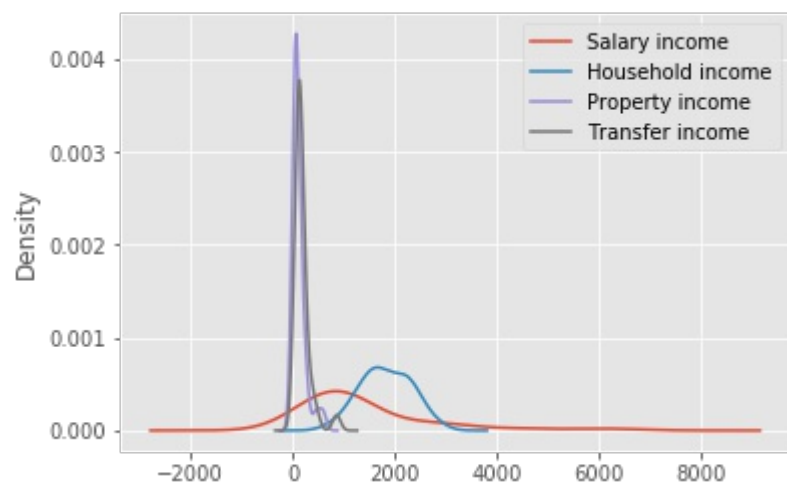
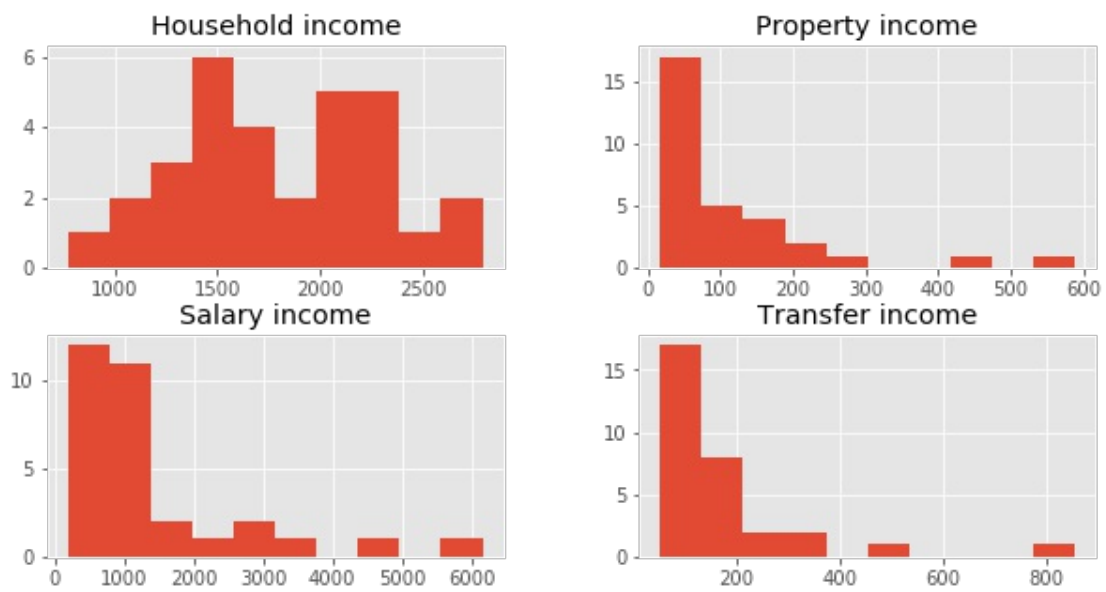


## 直方图及其密度曲线图

```
data.hist(bins=10,figsize=(10,5))
plt.show()
```

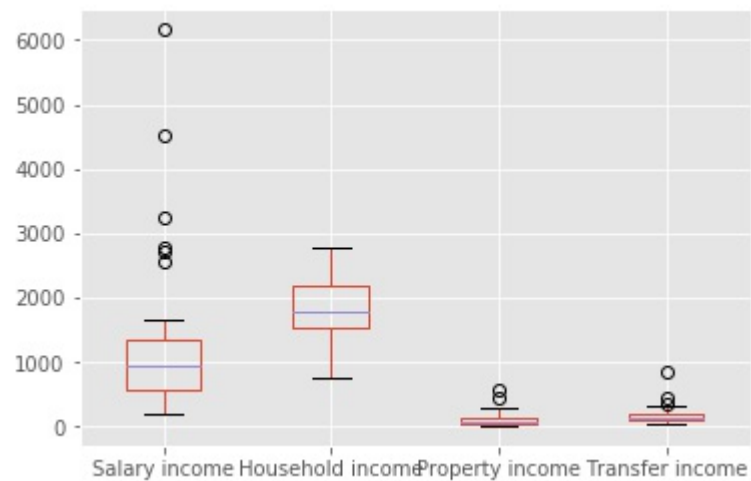
```
data.plot.kde()
plt.show()
```

```
data.plot.kde(subplots=True, figsize=(6,12))
plt.show()
```



箱线图

```
data.boxplot()
plt.show()
```

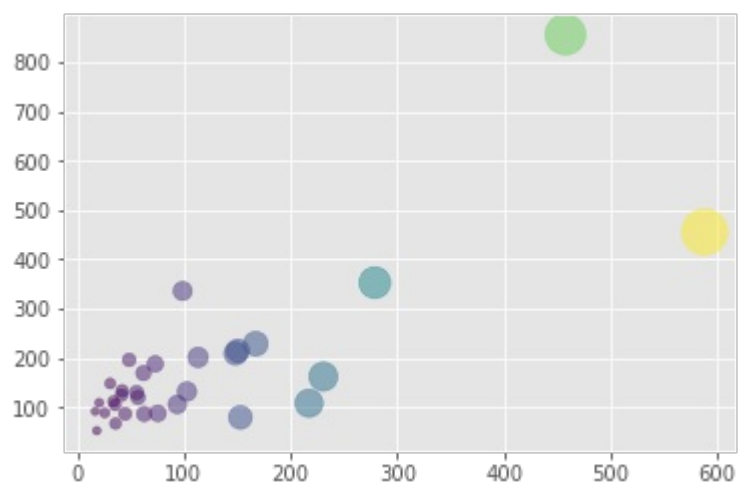


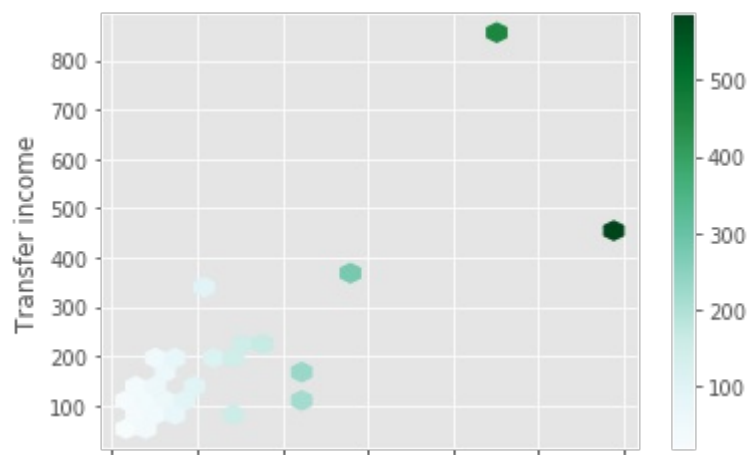
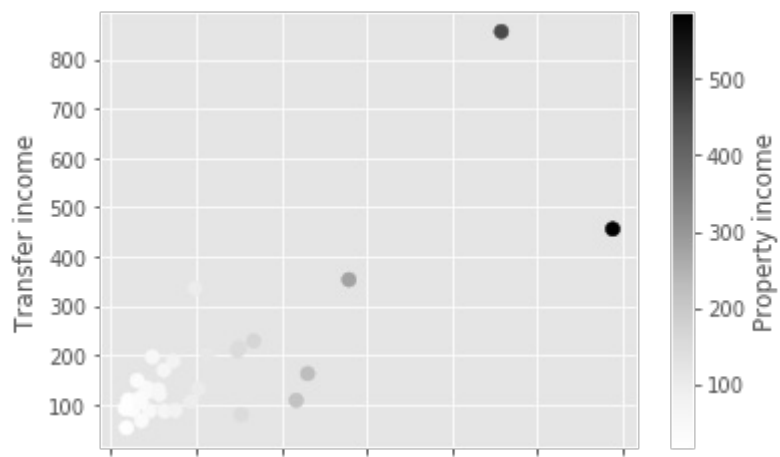
## 散点图

```
plt.scatter(data[columns[3]], data[columns[4]],c=data[columns[3]],s=data[columns[3]])
plt.show()
```

```
data.plot.scatter(x=columns[3], y=columns[4],c=columns[3], s=50)
plt.show()
```

```
data.plot.hexbin(x=columns[3], y=columns[4],C=columns[3], reduce_C_function=None)
plt.show()
```





## 面积图

```
data.plot.area(stacked=True)
plt.show()
```

```
data.plot.area(stacked=False)
plt.show()
```





## 饼图

```
for i in range(1, len(columns)):
    ax = plt.subplot(2,2,i)
    data.plot.pie(y=columns[i], figsize=(12, 12), ax=ax)
plt.show()
```

