Excel电子表格合并程序

```
import pandas as pd

startyear=int(input())
#人均期望寿命
dataset=pd.read_excel("life.xlsx")
a=pd.DataFrame(columns=("country","life-exp","year"))
for i in range(startyear,2019):
    b=dataset[['country',i]].copy()
    b['year']=i
    b.columns=['country','life-exp','year']
    c=a.append(b)
    a=c
```

```
#人均收入，以PPP计算
dataset=pd.read_excel("income.xlsx")
x=pd.DataFrame(columns=("country",'income',"year"))
for i in range(startyear,2019):
    y=dataset[['country',i]].copy()
    y['year']=i
    y.columns=['country','income','year']
    z=x.append(y)
    x=z

data=pd.merge(a,x)
data.to_excel(f"{startyear}到2018人均GDP和人均寿命.xlsx")
```

可视化程序

```
import pandas as pd
from plotly.offline import  plot
import plotly.express as px

dataset=pd.read_excel("人均GDP和人均寿命1900.xlsx")
figure = px.scatter(dataset, x="income", y="life-exp", animation_frame="year",
                    animation_group="country",size="income", color="continent",
                    hover_name="country",log_x=True, size_max=45,
                    range_x=[500,200000], range_y=[25,90],
                    labels=dict(income="人均收入(PPP购买力标准)",lifeExp="人均寿命"))

plot(figure)
```