Python Project – 1: Analyzing Naming Trends using Python

Project: Analyzing the naming trends using Python Industry: General Problem Statement: The dataset is in Zipped format, we have to extract the dataset in the program, visualize the number of male and female babies born in a particular year, and find out popular baby names. Description: This project not only focusses on implementing data manipulation and data visualization using Pandas library, but also tests your ability to deal with real word problem statements. Dataset: Popular baby names data provided by Social Security Administration (SSA) of United States

In [ ]:
```
Hints:
  First, use Pandas, zipfile, and BytesIO library to extract the data. Find out a v
files that consists useful data.
  Hint: pd.read_csv(BytesIO(z.read(file_name)), encoding='utf-8', engine='python',
  Then, visualize the number of male and female babies born in a particular year wi
pandas.DataFrame.plot, then Analyse baby names by sorting out all birth counts.
  Then, analyse baby names by sorting out top 100 birth counts and group them by na
out popular baby names
```

In [1]:
```
import os
os.chdir('C:\\Users\\veena\\OneDrive\\Desktop\\intellipaat assighnment pdf s')
```

In [2]:
```
from io import BytesIO
from zipfile import ZipFile
import matplotlib.pyplot as plt
%matplotlib inline
import pandas as pd
import numpy as np
```

In [3]:
```
z=ZipFile('names.zip').extractall('.')
```

In [4]:
```
z
```

In [5]:
```
years=[]

for year in range(1880,2021):
    years.append(pd.read_csv(f'yob{year}.txt',names=['Name','Gender','Babies']))
    years[-1]['Year']=year
```

In [6]:
```
df=pd.concat(years)
df
```

Out[6]:

	Name	Gender	Babies	Year
0	Mary	F	7065	1880
1	Anna	F	2604	1880
2	Emma	F	2003	1880
3	Elizabeth	F	1939	1880
4	Minnie	F	1746	1880
...	...	...	...	...
31448	Zykell	M	5	2020
31449	Zylus	M	5	2020
31450	Zymari	M	5	2020
31451	Zyn	M	5	2020
31452	Zyran	M	5	2020

2021244 rows × 4 columns

In [7]:
```
df_pivot=pd.pivot_table(data=df,index=['Year'],columns=['Gender'],values=['Babies'
df_pivot
```

Out[7]:

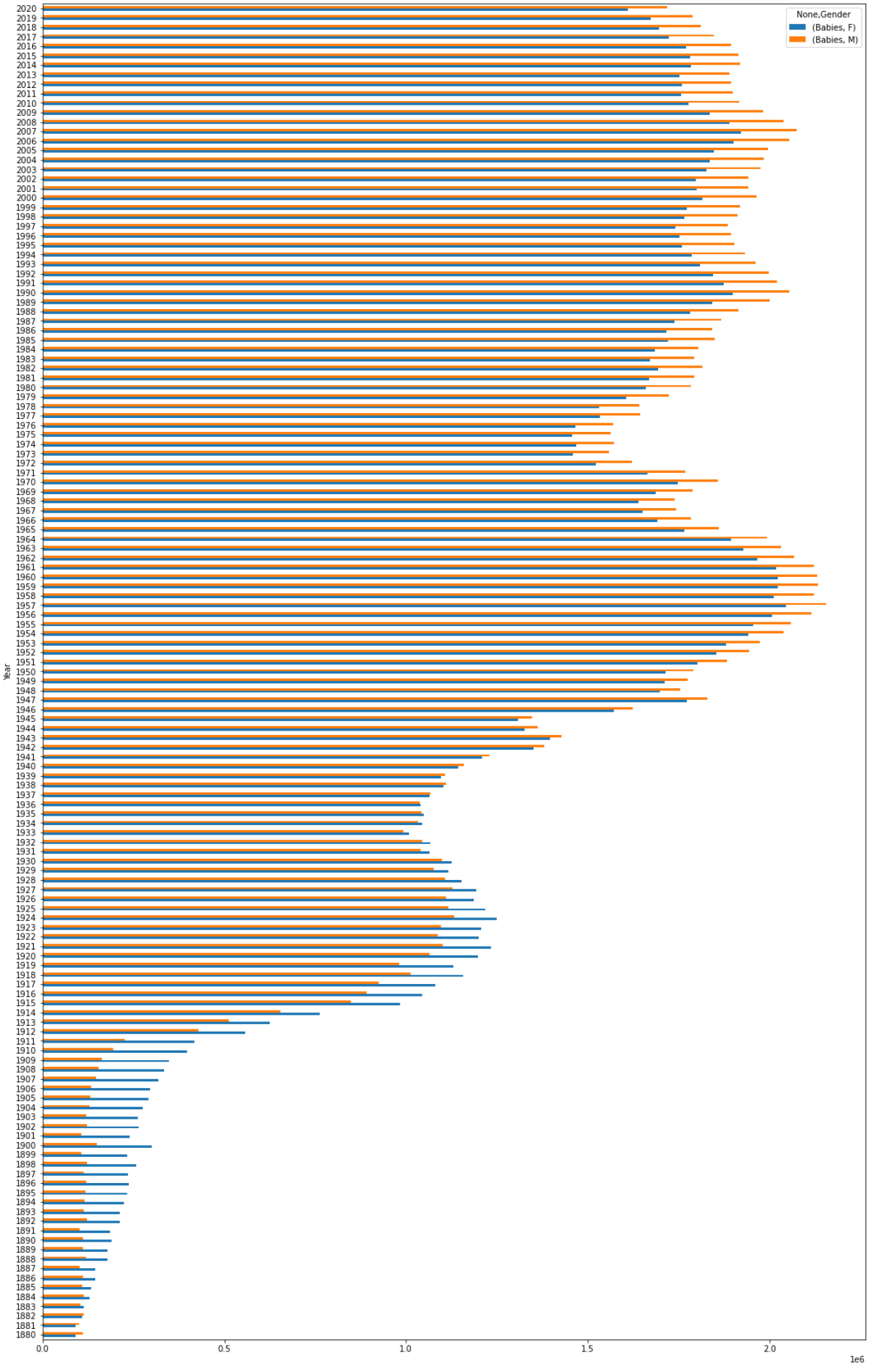
	Babies	
Gender	**F**	**M**
Year		
1880	90994	110490
1881	91953	100737
1882	107847	113686
1883	112319	104625
1884	129019	114442
...	...	...
2016	1769164	1894723
2017	1723043	1847191
2018	1696917	1811738
2019	1673030	1788414
2020	1609171	1718248

141 rows × 2 columns

In [8]:
```
plt.figure(figsize=(10,30))
df_pivot.plot(kind='barh',figsize=(18,30),grid=False)
```

Out[8]:
```
<AxesSubplot:ylabel='Year'>

<Figure size 720x2160 with 0 Axes>
```



In [10]:
```
pd.options.display.max_rows=100
sort_baby_names=df.sort_values(by='Babies',ascending=False).reset_index(drop=True)
sort_baby_names.head()
```

Out[10]:

	Name	Gender	Babies	Year
0	Linda	F	99693	1947
1	Linda	F	96212	1948
2	James	M	94762	1947
3	Michael	M	92723	1957
4	Robert	M	91651	1947

In [11]:
```
df_pivot =pd.pivot_table(data=df,index=['Name'], columns=['Gender','Year'], values
df_pivot
```

Out[11]:

Gender											**F**	**...**		
Year	**1880**	**1881**	**1882**	**1883**	**1884**	**1885**	**1886**	**1887**	**1888**	**1889**	**...**	**2011**	**2012**	**2013**
Name														
Aaban	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	11.0	11.0	14.0
Aabha	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN
Aabid	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN
Aabidah	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN
Aabir	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Zyvion	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN
Zyvon	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN
Zyyanna	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN
Zyyon	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN
Zzyzx	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	...	NaN	NaN	NaN

100400 rows × 282 columns

In [12]:
```
top_100_names=sort_baby_names.head(100)
grouped_names=top_100_names[['Name','Babies']].groupby('Name').sum().sort_values(by
grouped_names
```

Out[12]:

Name	Babies
James	1808548
Michael	1768250
John	1525027
Robert	1467437
David	978084
Linda	441332
Mary	219697

In [ ]: