

Assignment 13

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Use Salaries.csv file already given to you show the answers by using Matplotlib library.

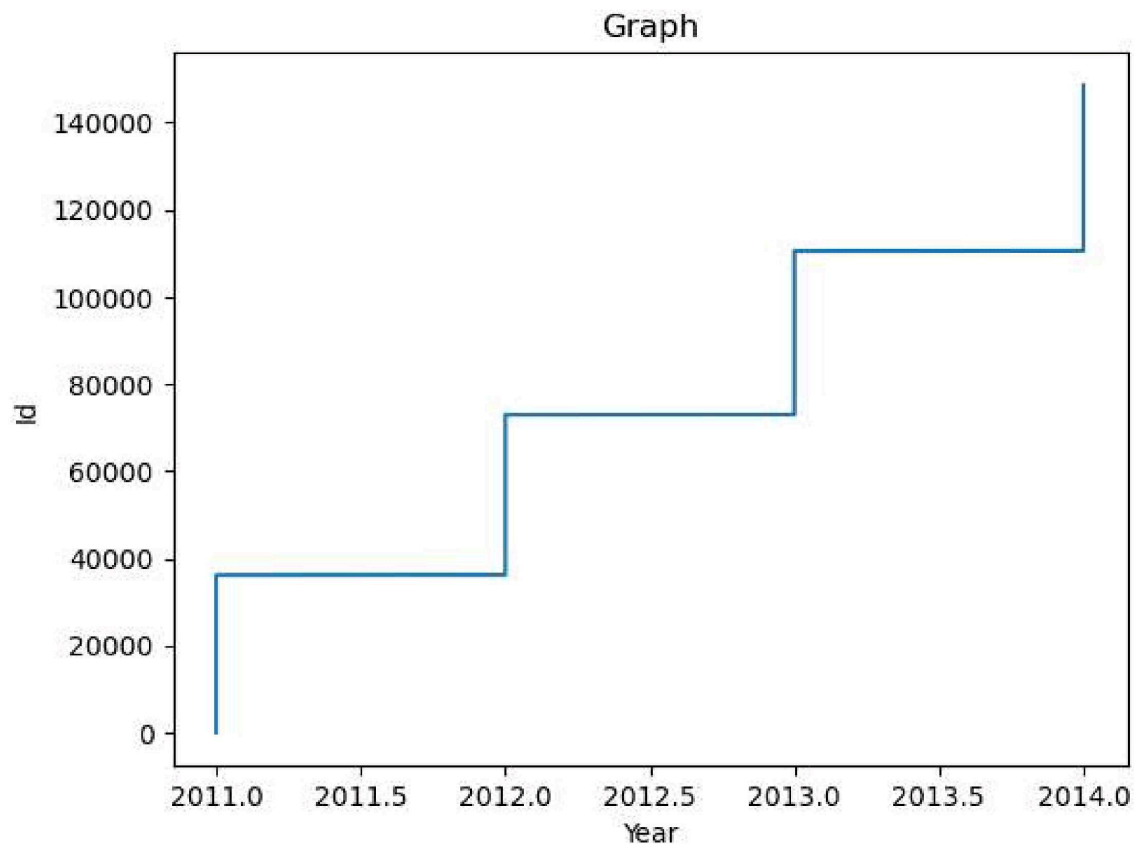
```
In [1]: import numpy as np  
import pandas as pd
```

```
In [2]: import matplotlib  
import matplotlib.pyplot as plt
```

```
In [3]: ## you will also need to use this line to see plots in the notebook  
%matplotlib inline
```

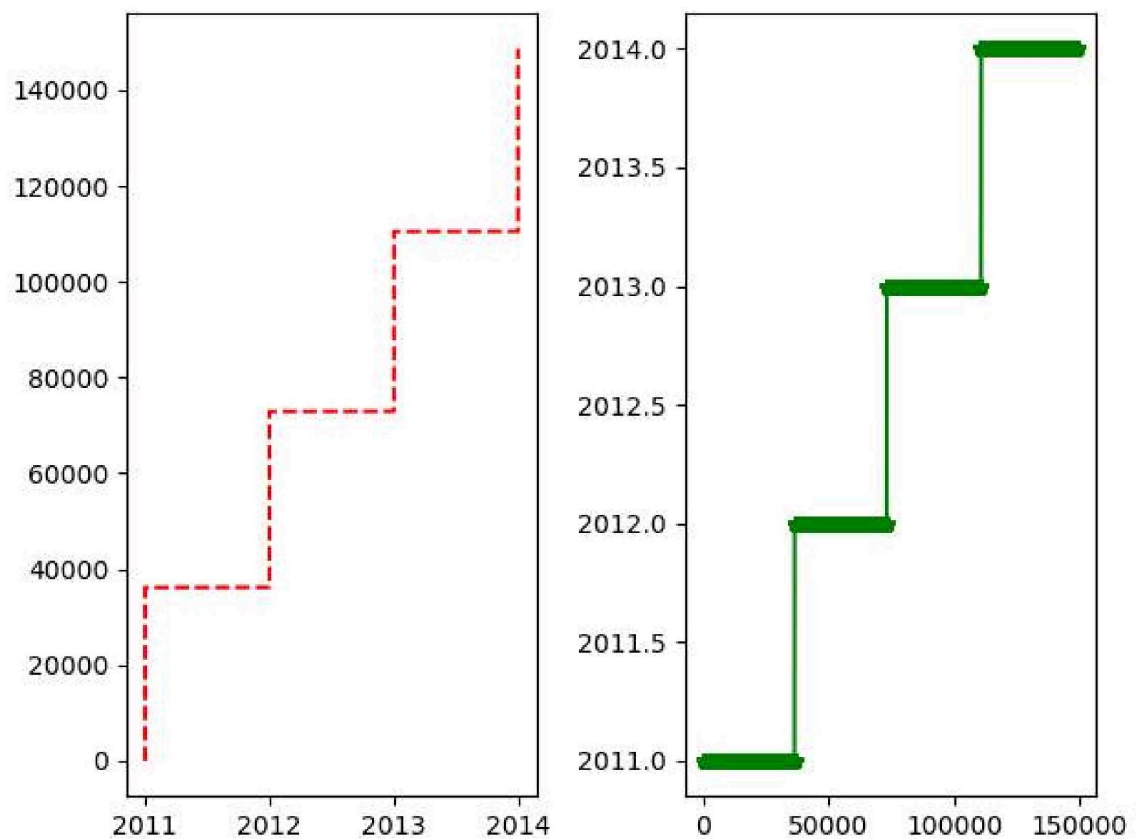
```
In [4]: sal=pd.read_csv('Salaries.csv',low_memory=False)
```

```
In [5]: x=sal['Year']  
y=sal['Id']  
plt.plot(x,y)  
plt.xlabel("Year")  
plt.ylabel("Id")  
plt.title("Graph")  
plt.show()
```



Create multiplots on the same canvas

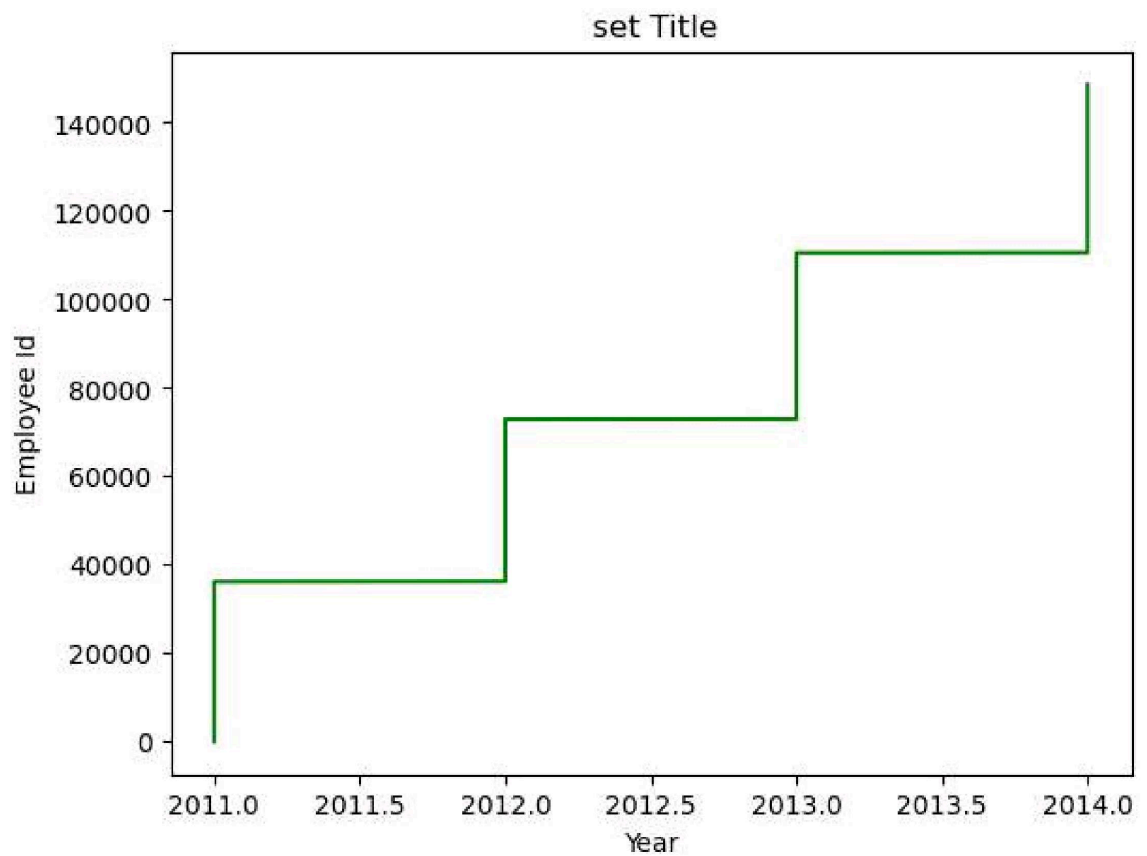
```
In [6]: fig, axes = plt.subplots()
plt.subplot(1, 2, 1)
plt.plot(x, y, 'r--')
plt.subplot(1, 2, 2)
plt.plot(y, x, 'g*-')
fig.tight_layout()
fig;
```



Object Oriented method inside matplotlib

```
In [7]: fig=plt.figure()  
axes=fig.add_axes([0.5,0.1,0.8,0.8])  
axes.plot(x,y,'g')  
axes.set_xlabel('Year')  
axes.set_ylabel('Employee Id')  
axes.set_title(' set Title')
```

```
Out[7]: Text(0.5, 1.0, ' set Title')
```

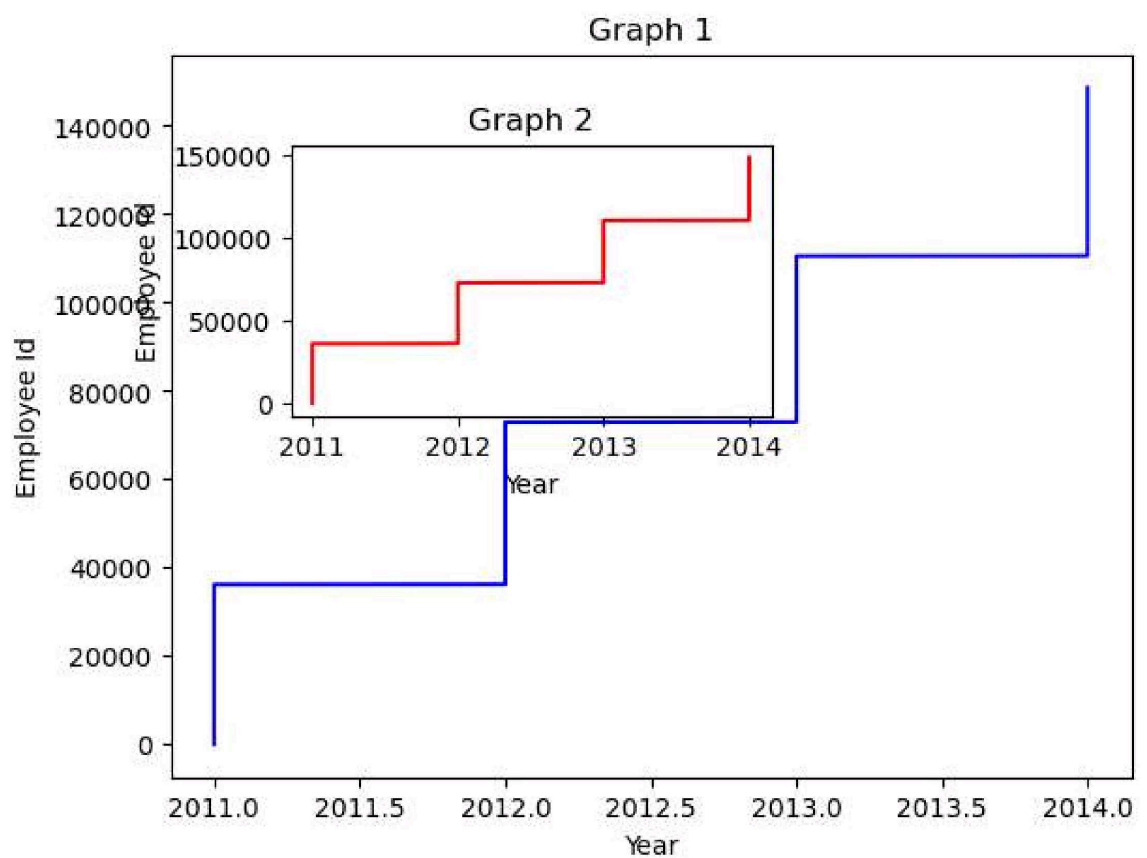


```

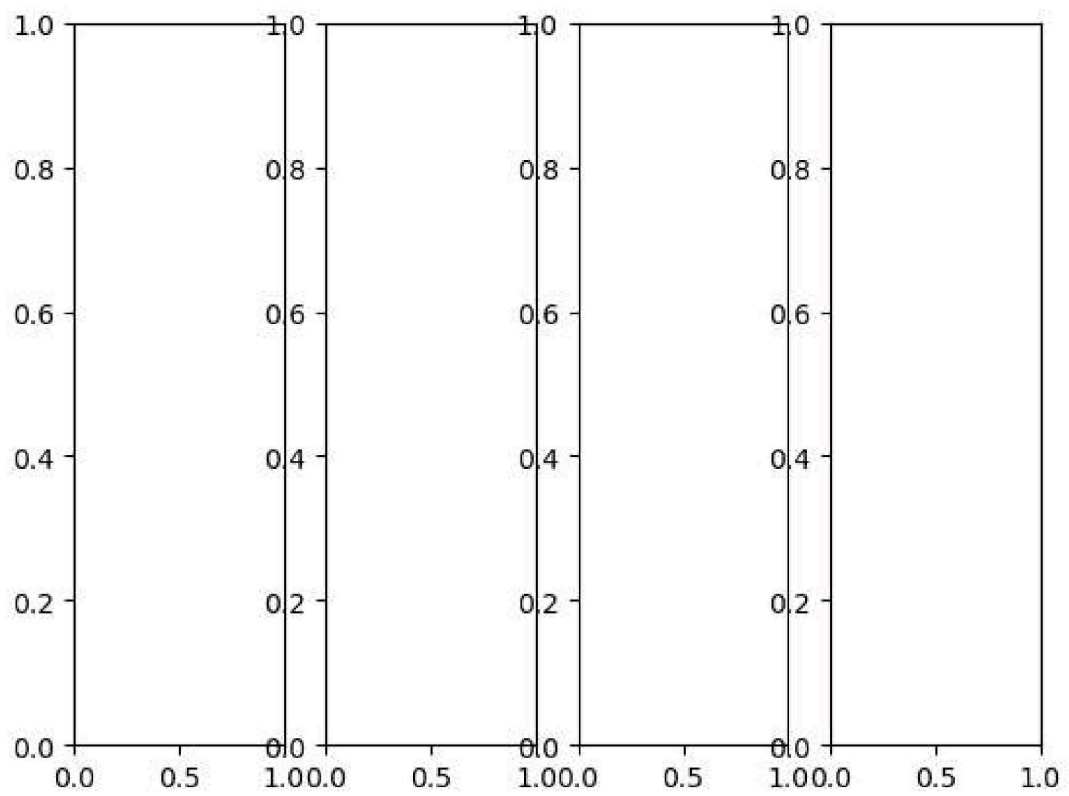
In [8]: fig=plt.figure()
axes1=fig.add_axes([0.1,0.1,0.8,0.8])# main axes
axes2=fig.add_axes([0.2,0.5,0.4,0.3])# insert axes
# Larger figure axes 1
axes1.plot(x,y,'b')
axes1.set_xlabel('Year')
axes1.set_ylabel('Employee Id')
axes1.set_title('Graph 1')
# insert figure axes
axes2.plot(x,y,'r')
axes2.set_xlabel('Year')
axes2.set_ylabel('Employee Id')
axes2.set_title('Graph 2')

```

Out[8]: Text(0.5, 1.0, 'Graph 2')



```
In [9]: fig, axes=plt.subplots(nrows=1,ncols=4)
```



```
In [10]: axes
for ax in axes:
    ax.plot(x,y,'r--')
    ax.set_xlabel('x')
    ax.set_ylabel('y')
    ax.set_title('title')
fig.tight_layout()
fig
```

Out[10]:

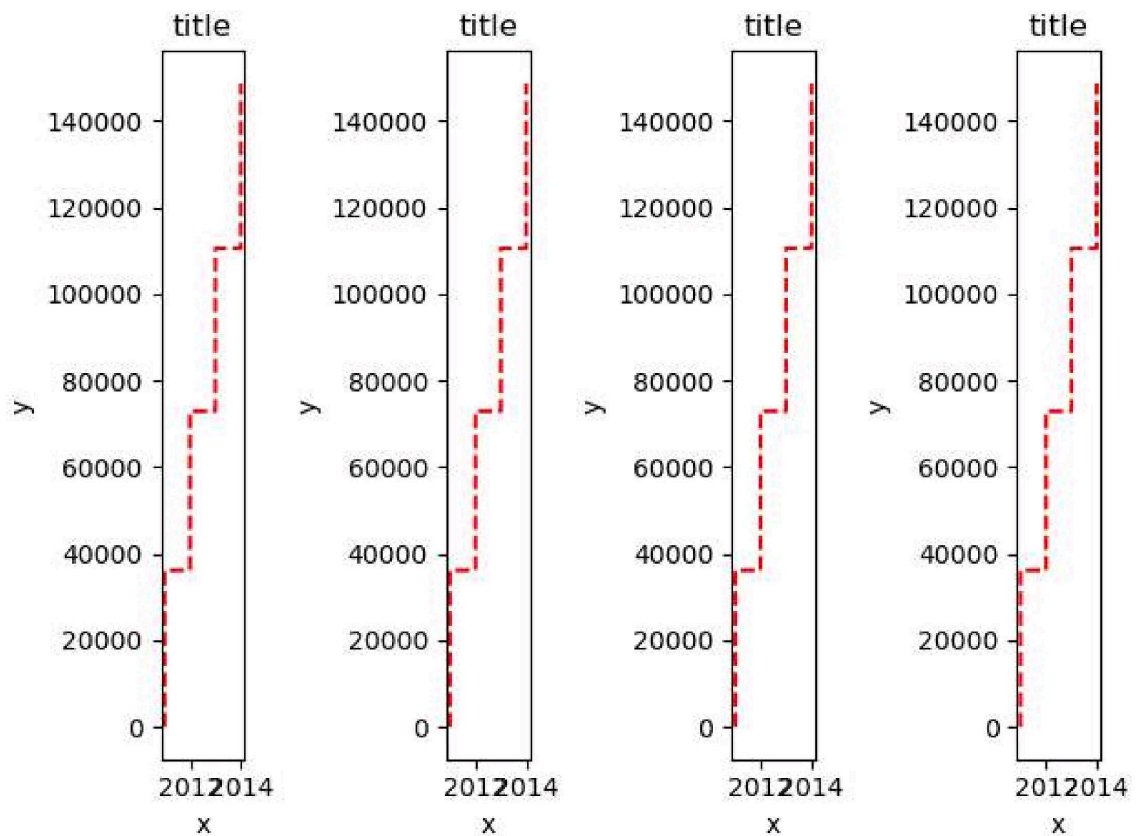
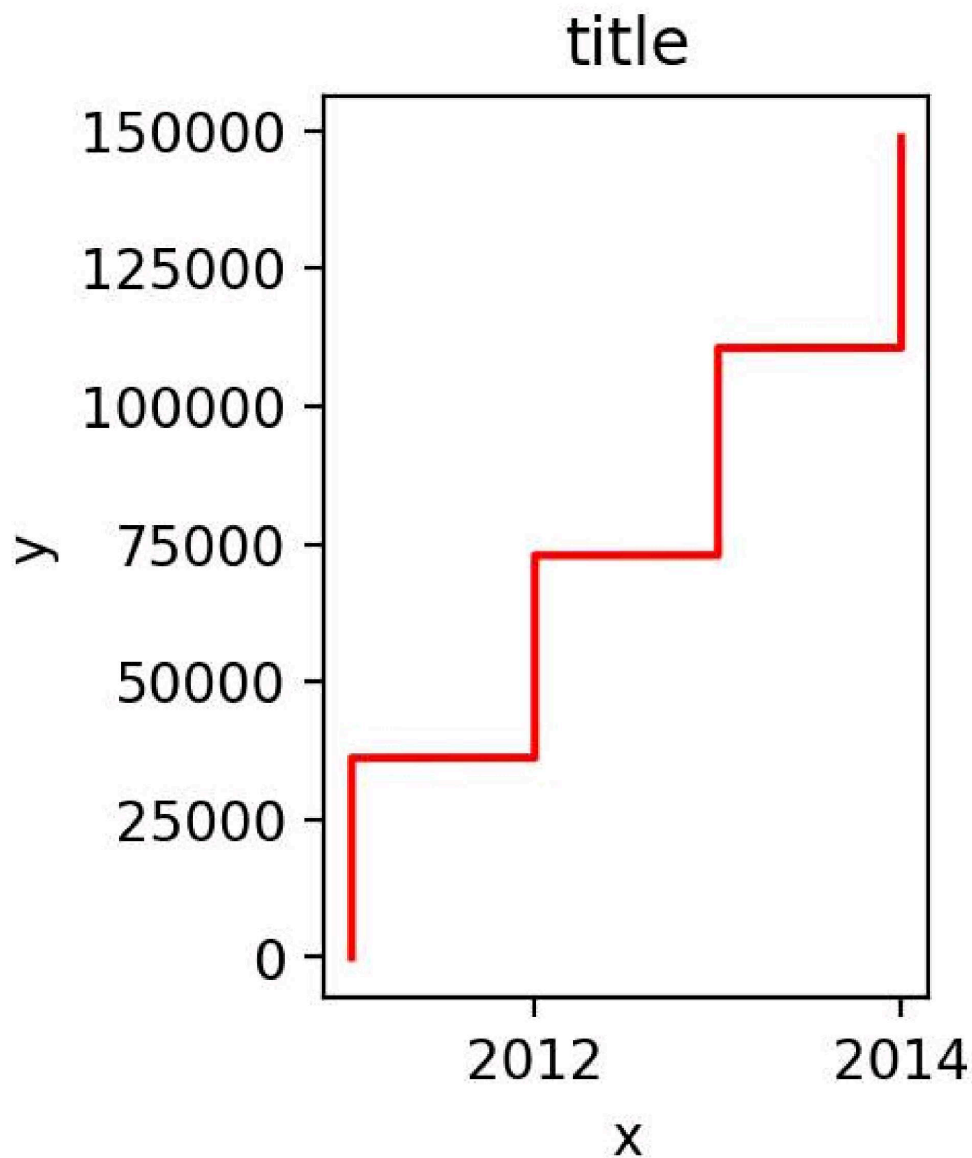


Figure size, aspect ratio and DPI

```
In [11]: fig=plt.figure(figsize=(8,4),dpi=100)
```

<Figure size 800x400 with 0 Axes>

```
In [12]: fig , axes = plt.subplots (figsize=(2,3),dpi=200)
axes.plot(x,y,'r')
axes.set_xlabel('x')
axes.set_ylabel('y')
axes.set_title('title');
```



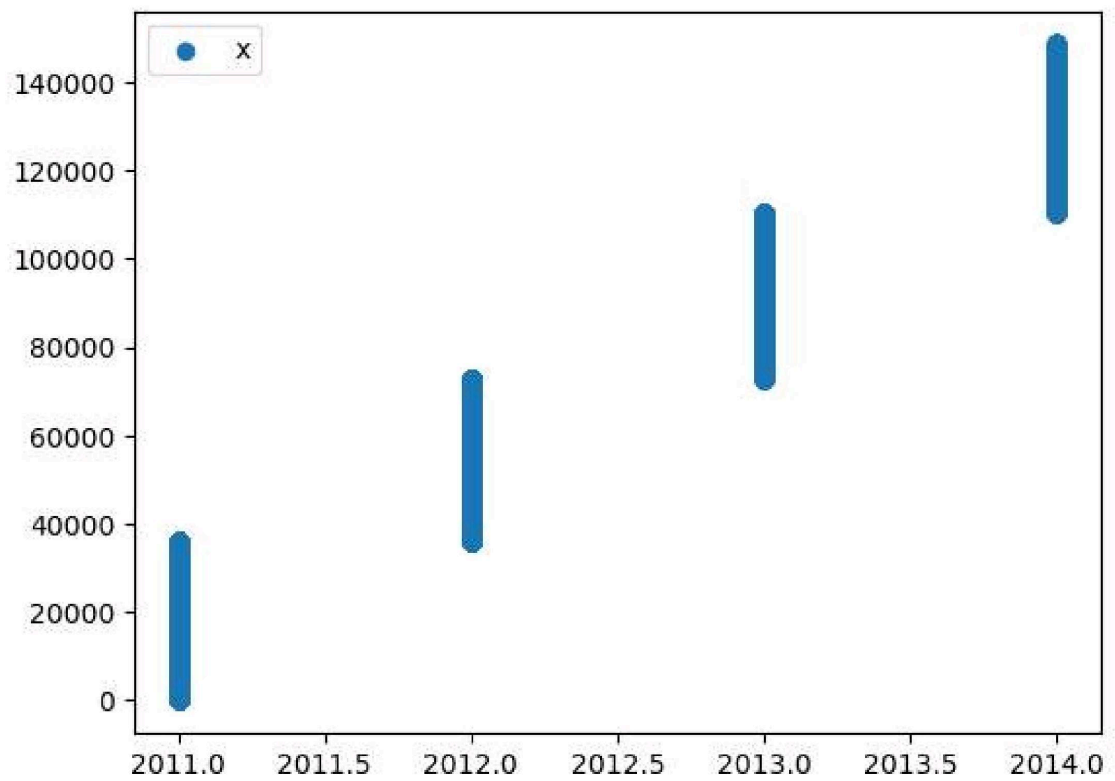
Saving figures

```
In [13]: fig.savefig("Figure.png")
```

```
In [14]: fig.savefig("Sal.jpeg")
```

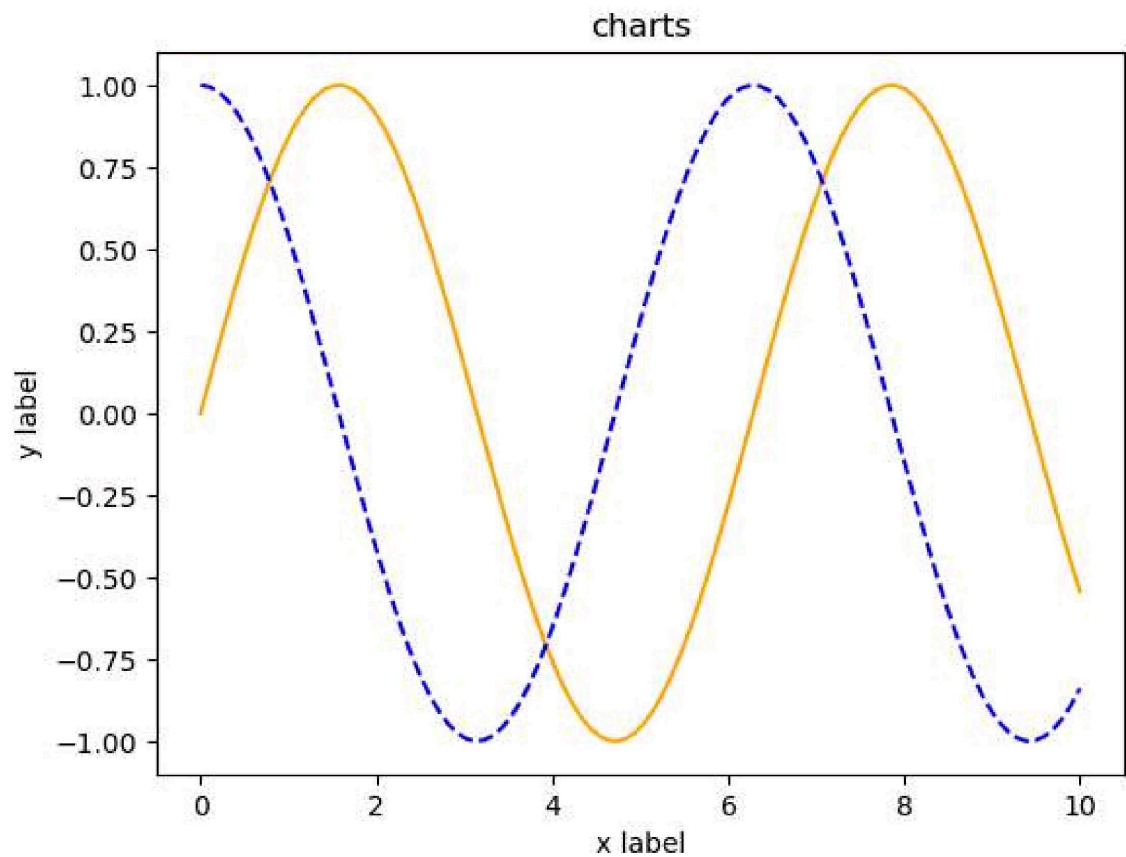

Scatter plot

```
In [15]: x=sal['Year']  
y=sal['Id']  
plt.scatter(x,y,label='x')  
plt.legend()  
plt.show()
```



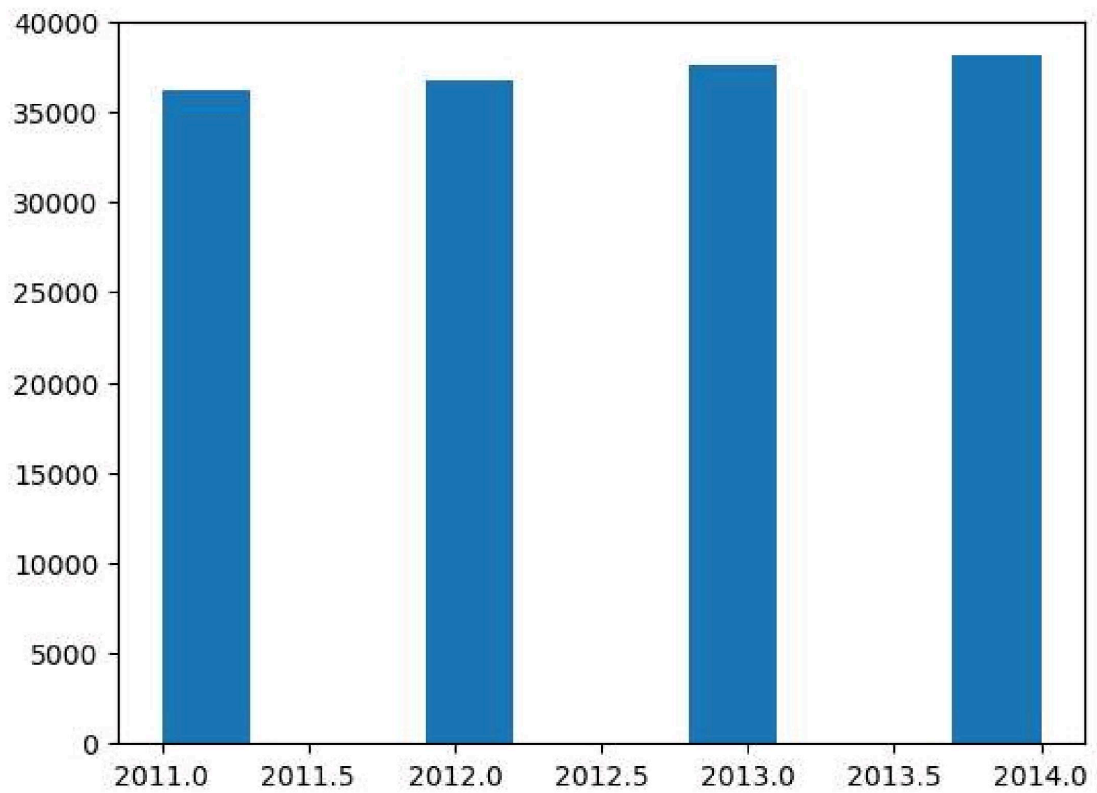
line plot

```
In [17]: x1=np.linspace(0,10,100)
plt.plot(x1,np.sin(x1),'-', color='orange')
plt.plot(x1,np.cos(x1),'--', color='b')
plt.xlabel('x label')
plt.ylabel('y label')
plt.title('charts')
plt.show()
```



Histogram

```
In [18]: plt.hist(x)  
plt.show()
```



```
In [ ]:
```