Lab-3

Matplotlib Exercises

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Import Numpy, Panda and Matplotlib library

In [1]:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [2]:

```
x = np.arange(0,50)
y = x*2
z = x**2
```

Question 1

Follow steps:

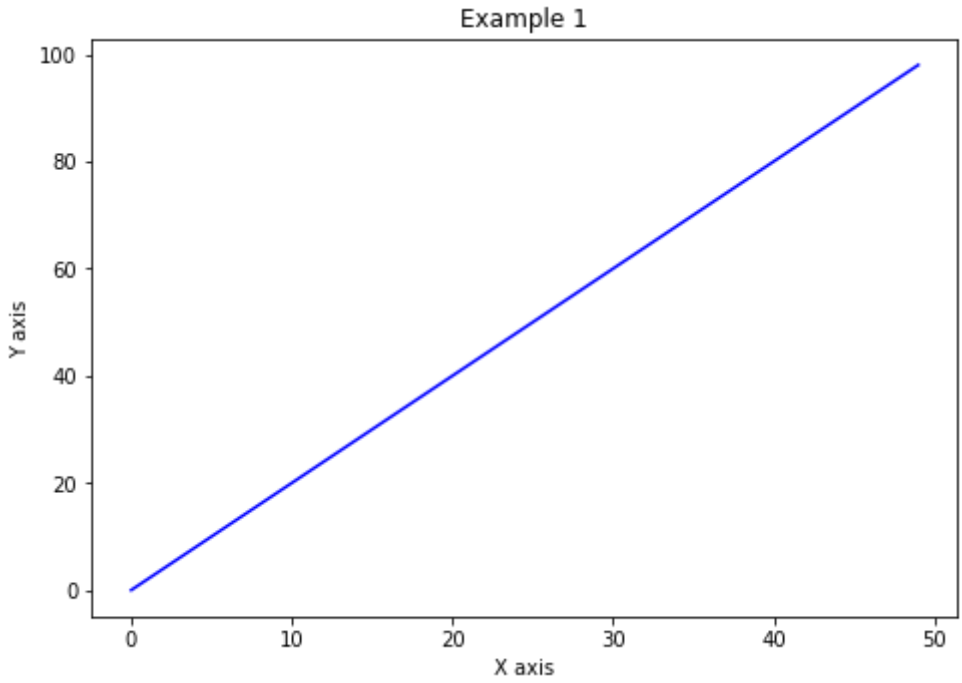
- Create a figure object called fig using plt.figure() **
- Use add_axes to add an axis to the figure canvas at [0,0,1,1]. Call this new axis ax.
- Plot (x,y) on that axes and set the labels and titles to match the plot below:**

In [5]:

```
fig = plt.figure()
ax = fig.add_axes([0, 0, 1, 1])
ax.plot(x, y, 'b')
ax.set_xlabel('X axis') # Notice the use of set_ to begin methods
ax.set_ylabel('Y axis')
ax.set_title('Example 1')
```

Out[5]:

```
Text(0.5, 1.0, 'Example 1')
```



Question 2

- Create a figure object and put two axes on it, ax1 and ax2. Located at [0,0,1,1] and [0.2,0.5,.2,.2] respectively.
- plot (x,y) on both axes. And call your figure object to show it.

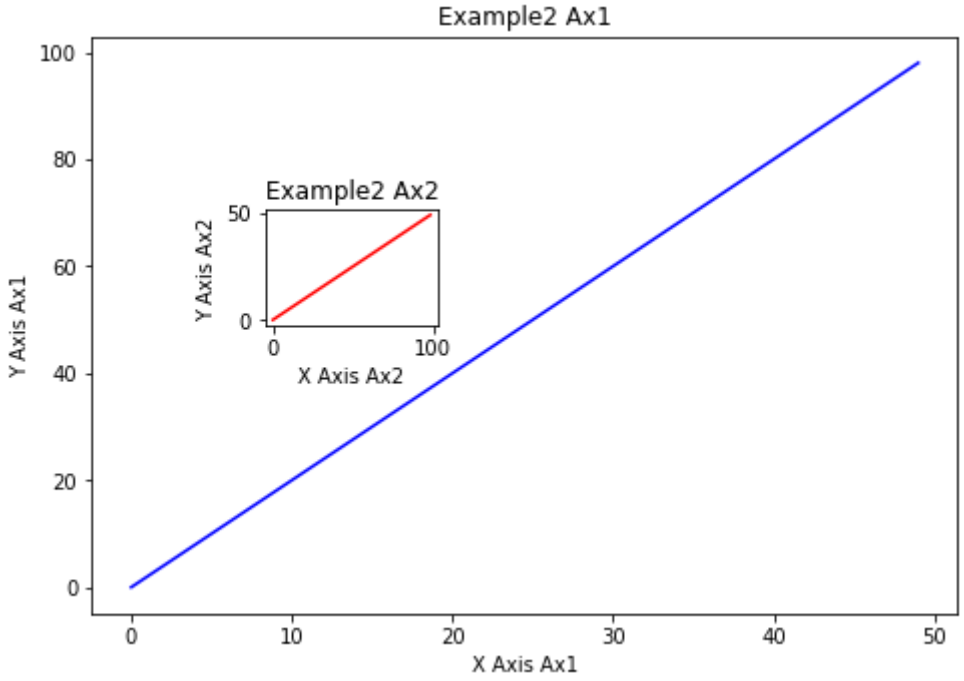
In [6]:

```
fig = plt.figure()

ax1 = fig.add_axes([0, 0, 1, 1]) # main ax
ax2 = fig.add_axes([0.2, 0.5, 0.2, 0.2]) # inset ax


# Larger Figure Ax 1
ax1.plot(x, y, 'b')
ax1.set_xlabel('X Axis Ax1')
ax1.set_ylabel('Y Axis Ax1')
ax1.set_title('Example2 Ax1')


# Insert Figure Ax 2
ax2.plot(y, x, 'r')
ax2.set_xlabel('X Axis Ax2')
ax2.set_ylabel('Y Axis Ax2')
ax2.set_title('Example2 Ax2');
```



Question 3

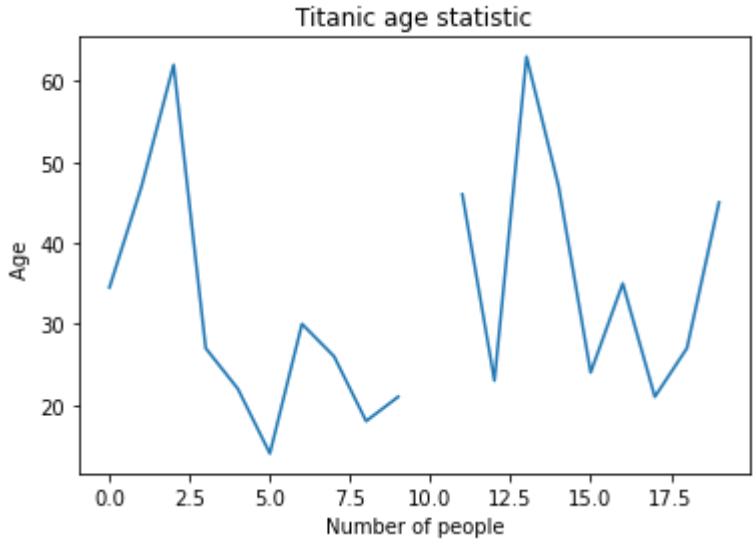
- Read the dataset Titanic, create the dataframe and read all columns.
- Plot the Age column information
- Plot all columns information

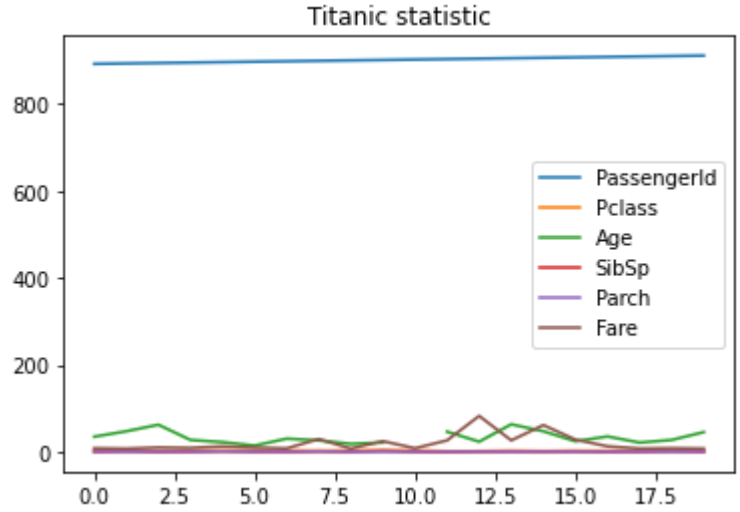
In [18]:

```
titanic = pd.read_csv('E:\Programming\Humber college\Humber Sem 2\Data Analytics\Week-4/Tit

age = titanic['Age']
age.plot()
plt.xlabel('Number of people')
plt.ylabel('Age ')
plt.title('Titanic age statistic')
plt.show()

titanic.plot()
plt.title('Titanic statistic')
plt.show()
```





Exercise 4

Create a bar chart and pie chart for the column Age, Parch and Sex of the Titanic dataset.

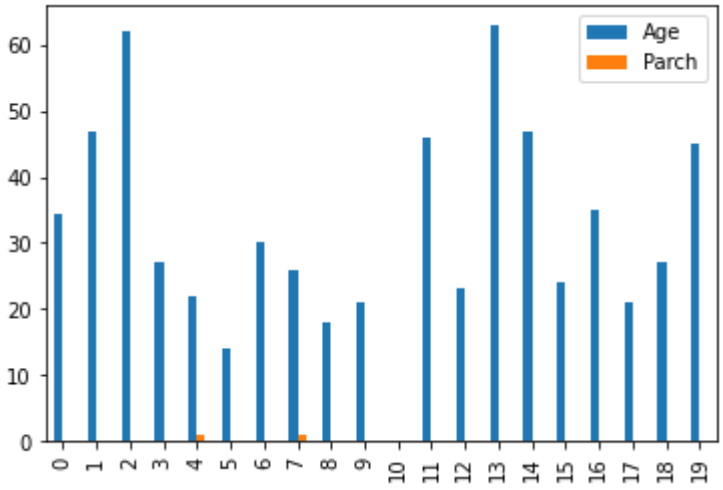
In [33]:

```
t_data = titanic[['Age', 'Parch','Sex']]
t_data.plot(kind="bar")

# Column Sex couldn't show in charts because it is non-numeric column
```

Out[33]:

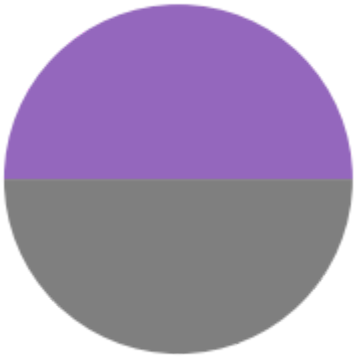
<AxesSubplot:>



In [35]:

```
age
# plt.pie(age)
# plt.show()
# Age column will not plot in pie chart because it has too many info

parch = titanic['Parch']
plt.pie(parch)
plt.show()
```



In [ ]:

```
Please save as Pdf and upload in Blackboard Lab4.
```