Lab-3_Part_1

Matplotlib Exercises

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Import Numpy, Panda and Matplotlib library

```
In [27]: import numpy as np
         import pandas as pd
         import matplotlib.pyplot as plt
```

```
In [41]: x = np.arange(0,50)
         y = x*2
         z = x**2
```
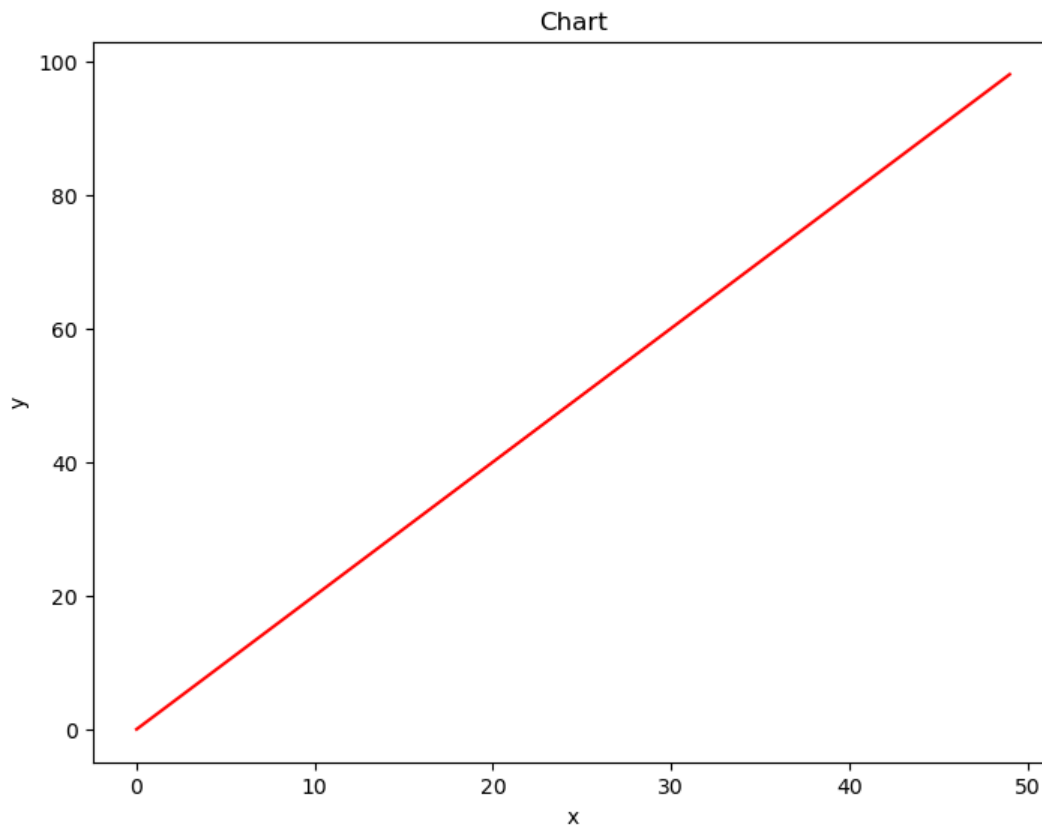
Question 1

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 [43]: fig = plt.figure()
         ax = fig.add_axes([0,0,1,1])
         ax.plot(x,y, "r")
         ax.set_xlabel("x")
         ax.set_ylabel("y")
         ax.set_title("Chart")
```

Out[43]: Text(0.5, 1.0, 'Chart')

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 [49]: fig = plt.figure()

         ax1 = fig.add_axes([0,0,1,1])
         ax2 = fig.add_axes([0.2,0.5,0.2,0.2])

         ax1.plot(x,y, "r")
         ax1.set_xlabel("x")
         ax1.set_ylabel("y")
         ax1.set_title("Chart1")

         ax2.plot(z,y, "b")
         ax2.set_xlabel("x")
         ax2.set_ylabel("y")
         ax2.set_title("Chart2");

         plt.plot()
```
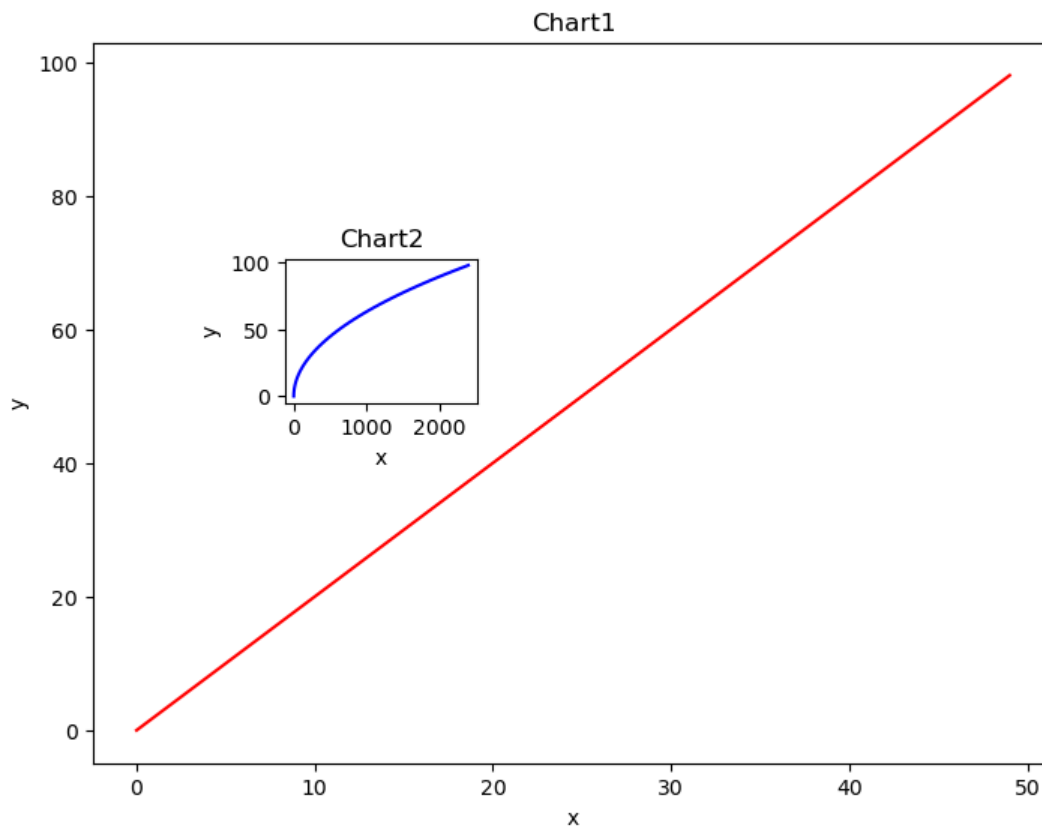
Out[49]: []

Question 3

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

```
In [62]: df_titanic = pd.read_csv("Titanic_1.csv")
         df_titanic.columns
```

Out[62]: Index(['PassengerId', 'Pclass', 'Name', 'Sex', 'Age', 'SibSp', 'Parch',
                'Ticket', 'Fare', 'Cabin', 'Embarked'],
               dtype='object')

```
In [70]: x = df_titanic["Age"]
         y = df_titanic["PassengerId"]
         plt.scatter(x,y)
```
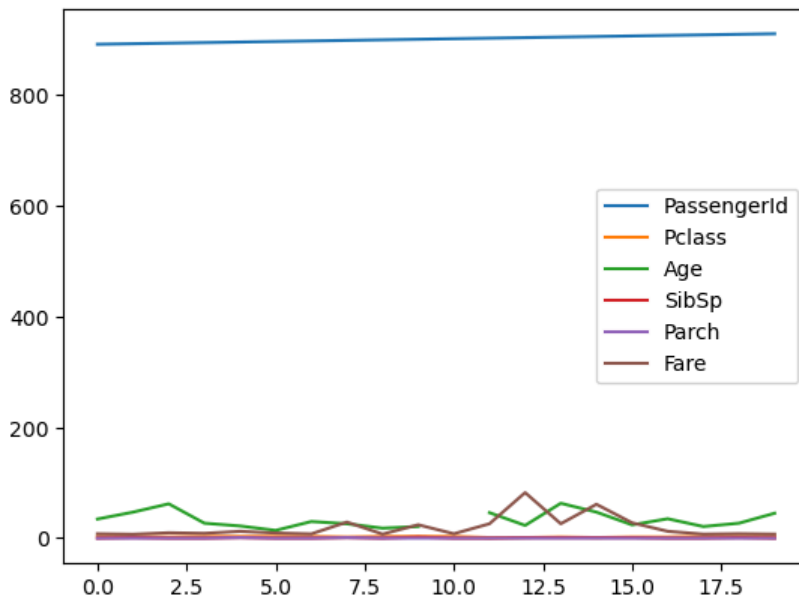
Out[70]: <matplotlib.collections.PathCollection at 0x257c5922f90>
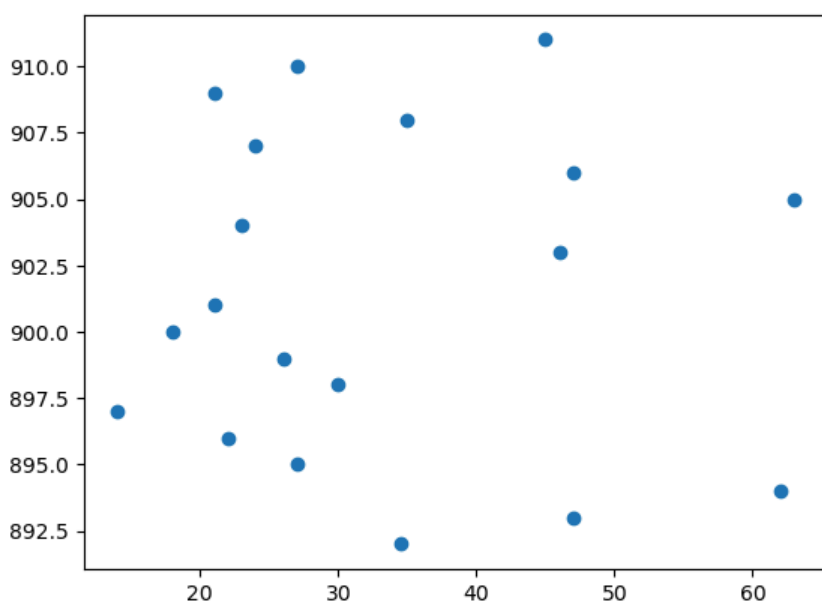
```
In [80]: df_titanic.columns
         df_titanic.plot()
```

```
Out[80]: <Axes: >
```
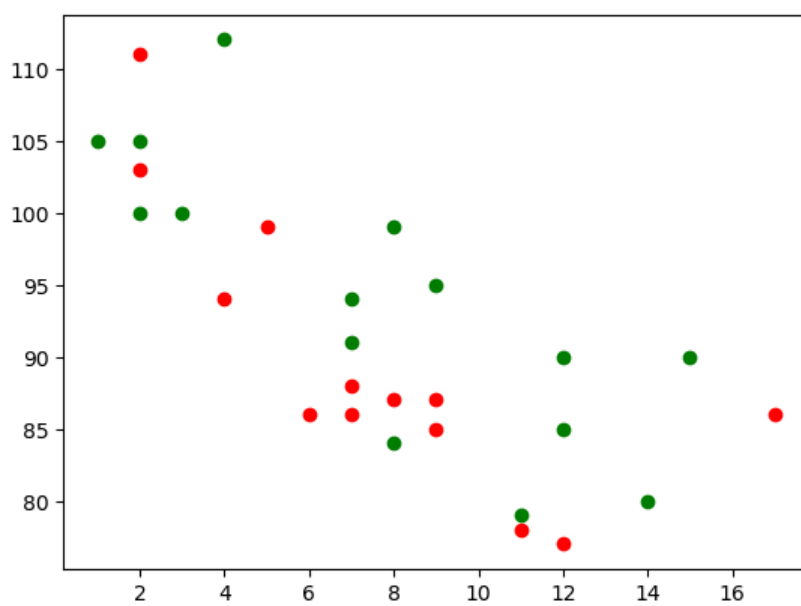

Question 4

Plot the array bellow with different line and scatterplot colors.

```
In [96]: import matplotlib.pyplot as plt
         import numpy as np

         x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
         y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
         plt.scatter(x,y, color = "r")

         x = np.array([2,2,8,1,15,8,12,9,7,3,11,4,7,14,12])
         y = np.array([100,105,84,105,90,99,90,95,94,100,79,112,91,80,85])
         plt.scatter(x,y, color = "g")
```
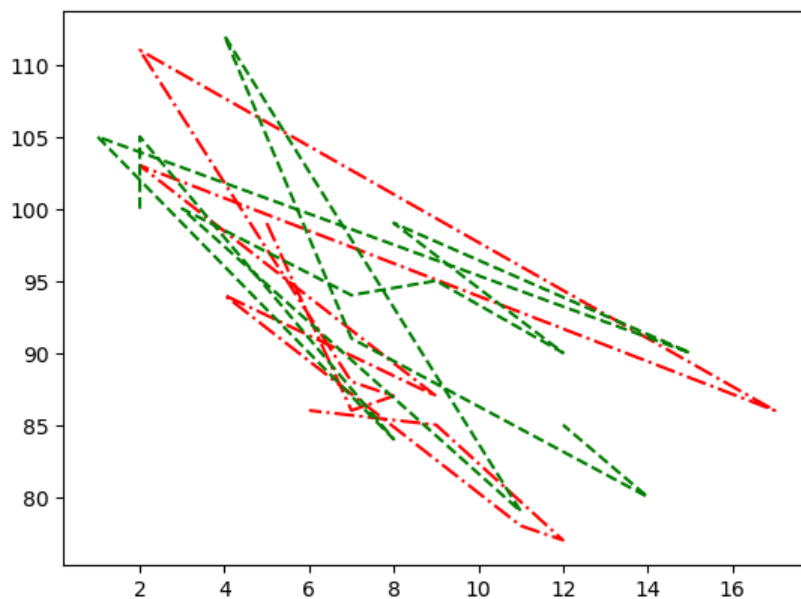
```
Out[96]: <matplotlib.collections.PathCollection at 0x257c9453920>
```

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

x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
plt.plot(x,y, color = "r", ls = "-.")

x = np.array([2,2,8,1,15,8,12,9,7,3,11,4,7,14,12])
y = np.array([100,105,84,105,90,99,90,95,94,100,79,112,91,80,85])
plt.plot(x,y, color = "g", ls = "--")
```

Out[104...   [<matplotlib.lines.Line2D at 0x257cb94f200>]

Question 5

Consider the x=np.arange(0,15,0.5), them plot (np.sin(x)), (np.sin(x+0.5)), (np.sin(x+1.0)), (np.cos(x)) with different linestyle and linewidth.

In [118...

```
x= np.arange(0,15,0.5)
plt.plot(np.sin(x), color = "blue", lw = 1, ls = "-")
plt.plot(np.sin(x+0.5), color = "green", lw = 1.5, ls = "--")
plt.plot(np.sin(x+1.0), color = "magenta", lw = 2.25, ls = "-.")
plt.plot(np.cos(x), color = "red", lw = 1.25, ls = "-.")
```

Out[118...   [<matplotlib.lines.Line2D at 0x257cd708710>]