Project On Pandas and Matplotlib

Create a DataFrame

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

# Firstly get the how many numbers of column are required
number_of_columns = int(input("Enter the number of columns : "))

columns = []

for i in range(number_of_columns):
# Then add the column names in that column
    columns.append(input("Enter the column name :"))


dct = {}

# Then get the how many percentage data store in the column
number_of_percentage_in_each_col = int(input("enter the number of
percentage of  in each column  : "))

for i in range(number_of_columns):

    lst = []

    for j in range(number_of_percentage_in_each_col):
# Then store the each percentage of student in the list
        lst.append(input(f"enter the percentage of column
{columns[i]}  : "))


# After that store the percenatge values in the  list data into the
dictionary
        dct[columns[i]] = lst
    dct[columns[i]] = lst
Data = pd.DataFrame(dct)
print(Data)


Enter the number of columns : 3
Enter the column name :Class1
Enter the column name :Class2
Enter the column name :Class3
enter the number of percentage of  in each column  : 5
```

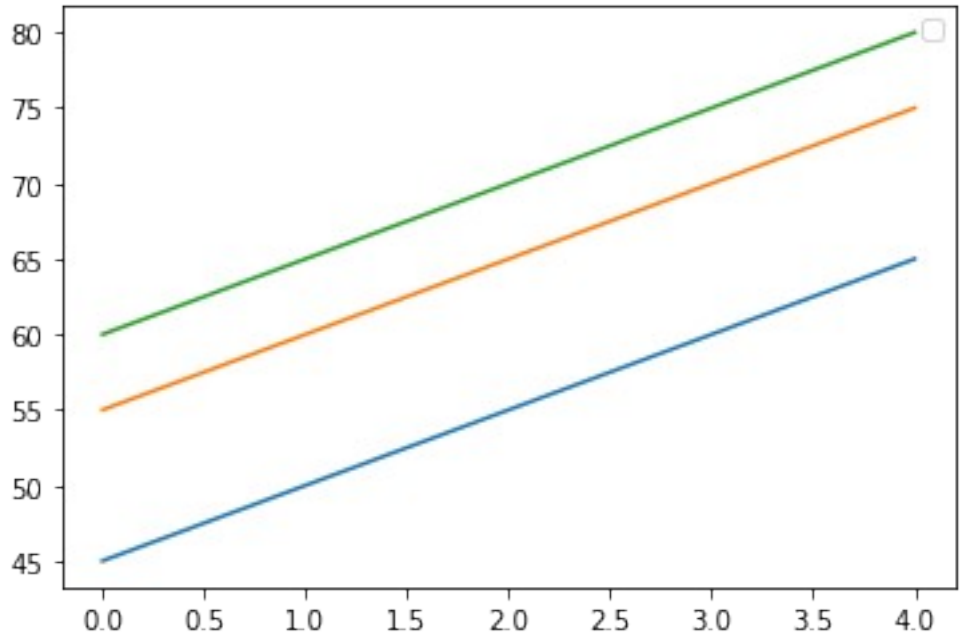
```
enter the percentage of column Class1  : 45
enter the percentage of column Class1  : 50
enter the percentage of column Class1  : 55
enter the percentage of column Class1  : 60
enter the percentage of column Class1  : 65
enter the percentage of column Class2  : 55
enter the percentage of column Class2  : 60
enter the percentage of column Class2  : 65
enter the percentage of column Class2  : 70
enter the percentage of column Class2  : 75
enter the percentage of column Class3  : 60
enter the percentage of column Class3  : 65
enter the percentage of column Class3  : 70
enter the percentage of column Class3  : 75
enter the percentage of column Class3  : 80
  Class1 Class2 Class3
0     45     55     60
1     50     60     65
2     55     65     70
3     60     70     75
4     65     75     80
```

columns of the DataFrame and plot a Comparison Plot(plot every data in single plot) With different Colors

```
import numpy as np
Class1 = np.array([45,50,55,60,65])
Class2 = np.array([55,60,65,70,75])
Class3 = np.array([60,65,70,75,80])
plt.plot(Class1)
plt.plot(Class2)
plt.plot(Class3)
plt.legend()
```

```
No artists with labels found to put in legend.  Note that artists
whose label start with an underscore are ignored when legend() is
called with no argument.
```

```
<matplotlib.legend.Legend at 0x19b2c70a970>
```



compare the data using Line Plot as well as Scatter Plot.

```
import numpy as np
Class_0 = np.array([45,50,55,60,65])
Class_1 = np.array([50,54,58,62,66])
Class_0 = np.array([45,50,55,60,65])
Class_2 = np.array([50,55,60,65,70])
Class_0 = np.array([45,50,55,60,65])
Class_3 = np.array([55,60,65,70,75])

plt.plot(Class_0,Class1,"r")
plt.plot(Class_1,Class2,"g")
plt.plot(Class_2,Class3,"b")
plt.legend()
```

```
Class_0 = np.array([45,50,55,60,65])
Class_1 = np.array([50,54,58,62,66])
Class_0 = np.array([45,50,55,60,65])
Class_2 = np.array([50,55,60,65,70])
Class_0 = np.array([45,50,55,60,65])
Class_3 = np.array([55,60,65,70,75])
plt.scatter(Class_0,Class1)
plt.scatter(Class_1,Class2)
plt.scatter(Class_2,Class3)
plt.legend()
```

```
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<matplotlib.legend.Legend at 0x19b2c6dac40>
```

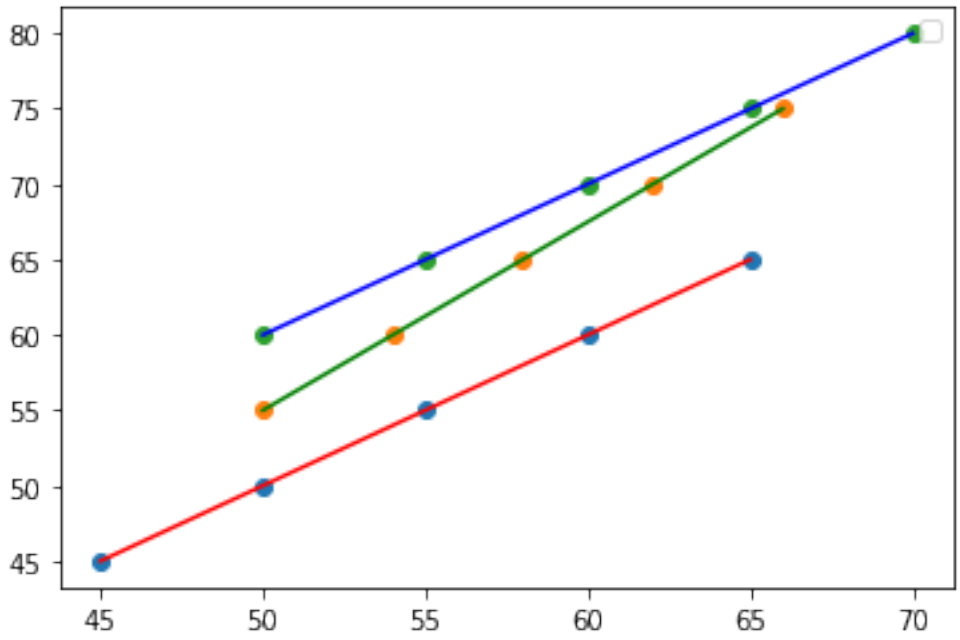

compare the data using there subplots

```
Class_0 = np.array([45,50,55,60,65])
Class_1 = np.array([50,54,58,62,66])

plt.subplot(1,2,1)
plt.plot(Class_0,Class1,marker = "o",color = "r")
plt.legend()

Class_0 = np.array([45,50,55,60,65])
Class_2 = np.array([50,55,60,65,70])
plt.subplot(1,2,2)
plt.plot(Class_0,Class2,marker = "*",color = "g")
plt.legend()

Class_0 = np.array([45,50,55,60,65])
Class_3 = np.array([55,60,65,70,75])

plt.subplot(1,2,2)
```

```
plt.plot(Class_0,Class3,marker = "^",color = "Pink")
plt.legend()
```

```
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```

```
<matplotlib.legend.Legend at 0x19b2c757fa0>
```