In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
```

In [21]:
```
df = pd.read_csv('UNRATE.csv')
df
```

Out[21]:

	DATE	UNRATE
0	1948-01-01	3.4
1	1948-02-01	3.8
2	1948-03-01	4.0
3	1948-04-01	3.9
4	1948-05-01	3.5
...	...	...
831	2017-04-01	4.4
832	2017-05-01	4.3
833	2017-06-01	4.4
834	2017-07-01	4.3
835	2017-08-01	4.4

836 rows × 2 columns

In [3]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 836 entries, 0 to 835
Data columns (total 2 columns):
 #   Column  Non-Null Count  Dtype  
---  ------  --------------  -----  
 0   DATE    836 non-null    object 
 1   UNRATE  836 non-null    float64
dtypes: float64(1), object(1)
memory usage: 13.2+ KB
```

In [4]:
```
df.shape
```

Out[4]:
```
(836, 2)
```

In [5]:
```
df.describe()
```

Out[5]:

	UNRATE
count	836.000000
mean	5.797488
std	1.634752
min	2.500000
25%	4.675000
50%	5.600000
75%	6.900000
max	10.800000

In [6]:
```
df.head()
```

Out[6]:

	DATE	UNRATE
0	1948-01-01	3.4
1	1948-02-01	3.8
2	1948-03-01	4.0
3	1948-04-01	3.9
4	1948-05-01	3.5

In [7]:
```
df.tail()
```

Out[7]:

	DATE	UNRATE
831	2017-04-01	4.4
832	2017-05-01	4.3
833	2017-06-01	4.4
834	2017-07-01	4.3
835	2017-08-01	4.4

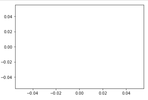
In [8]:
```
df.isnull().sum()
```

```
DATE      0
UNRATE    0
dtype: int64
```

In [9]:
```
df['DATE'] = pd.to_datetime(df['DATE'])
print(df.UNRATE.head(12))
```

```
0     3.4
1     3.8
2     4.0
3     3.9
4     3.5
5     3.6
6     3.6
7     3.9
8     3.8
9     3.7
10    3.8
11    4.0
Name: UNRATE, dtype: float64
```

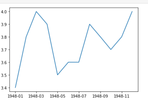
In [10]:
```
plt.plot()
plt.show()
```



FINDINGS

It is data visualization project about unemployement in USA. Basic usings of matplotliband pyplot module.

In [11]:
```
x_values = df['DATE'][0:12]
y_values = df['UNRATE'][0:12]
plt.plot(x_values , y_values)
plt.show()
```



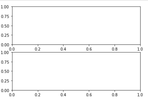
In [12]:
```
x_values = df["DATE"][0:12]
y_values = df["UNRATE"][0:12]
plt.plot(x_values , y_values)
plt.xticks(rotation = 90)
plt.xlabel('Month')
plt.ylabel("Unemployement rate")
plt.title('Monthly Unemployement Trends ')
```

```
Text(0.5, 1.0, 'Monthly Unemployement Trends ')
```

Final

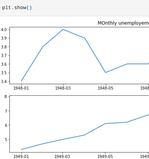
we found monthly unemployemnt trends in 1948.we can reaseach rate differences between months

In [13]:
```
fig = plt.figure()
ax1 = fig.add_subplot(2,1,1)
ax2 = fig.add_subplot(2,1,2)
plt.show()
```

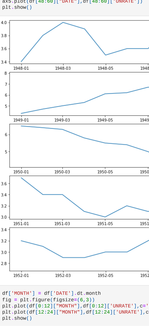


In [14]:
```
fig = plt.figure(figsize=(12,6))
ax1 = fig.add_subplot(2,1,1)
ax2 = fig.add_subplot(2,1,2)
ax1.plot(df[0:12]["DATE"], df[0:12]['UNRATE'])
ax1.set_title('Monthly unemployement Rate,1948')
ax2.plot(df[12:24]["DATE"],df[12:24]["UNRATE"])
ax1.set_title('Monthly unemployement Rate,1949')

plt.show()
```

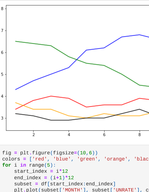


In [15]:
```
fig = plt.figure(figsize=(12,12))
ax1 = fig.add_subplot(5,1,1)
ax2 = fig.add_subplot(5,1,2)
ax3 = fig.add_subplot(5,1,3)
ax4 = fig.add_subplot(5,1,4)
ax5 = fig.add_subplot(5,1,5)
ax1.plot(df[0:12]["DATE"],df[0:12]['UNRATE'])
ax2.plot(df[12:24]["DATE"],df[12:24]['UNRATE'])
ax3.plot(df[24:36]["DATE"],df[24:36]['UNRATE'])
ax4.plot(df[36:48]["DATE"],df[36:48]['UNRATE'])
ax5.plot(df[48:60]["DATE"],df[48:60]['UNRATE'])
plt.show()
```



In [16]:
```
df['MONTH'] = df['DATE'].dt.month
fig = plt.figure(figsize=(6,3))
plt.plot(df[0:12]["MONTH"],df[0:12]['UNRATE'],c='red')
plt.plot(df[12:24]["MONTH"],df[12:24]['UNRATE'],c='blue')
plt.show()
```

In [17]:
```
df['MONTH'] = df['DATE'].dt.month
fig = plt.figure(figsize=(15,6))
plt.plot(df[0:12]["MONTH"],df[0:12]['UNRATE'],c='red')
plt.plot(df[12:24]["MONTH"],df[12:24]['UNRATE'],c='blue')
plt.plot(df[24:36]["MONTH"],df[24:36]['UNRATE'],c='green')
plt.plot(df[36:48]["MONTH"],df[36:48]['UNRATE'],c='orange')
plt.plot(df[48:60]["MONTH"],df[48:60]['UNRATE'],c='black')
plt.show()
```



In [18]:
```
fig = plt.figure(figsize=(10,6))
colors = ['red', 'blue', 'green', 'orange', 'black']
for i in range(5):
    start_index = i*12
    end_index = (i+1)*12
    subset = df[start_index:end_index]
    plt.plot(subset['MONTH'], subset['UNRATE'], c=colors[i],label = str(1948 + i))
plt.xlabel('Month, Integer')
plt.ylabel('Unemployment Rate, Percent')
plt.title('Monthly Unemployment Trends, 1948-1952')
plt.legend(loc="upper left")
plt.show()
```