seaLevelPredictor

July 10, 2023

[2]:
```
import pandas as pd
import matplotlib.pyplot as plt
from scipy.stats import linregress
```

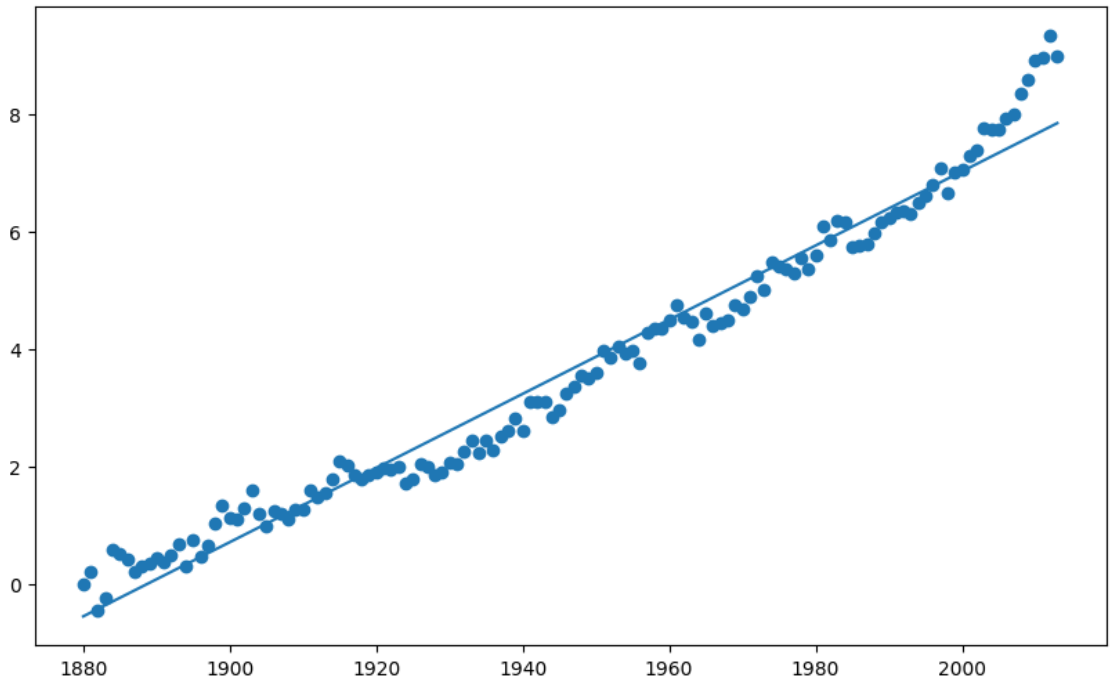
[4]:
```
df = pd.read_csv("epa-sea-level.csv")
```

[5]:
```
df.head()
```

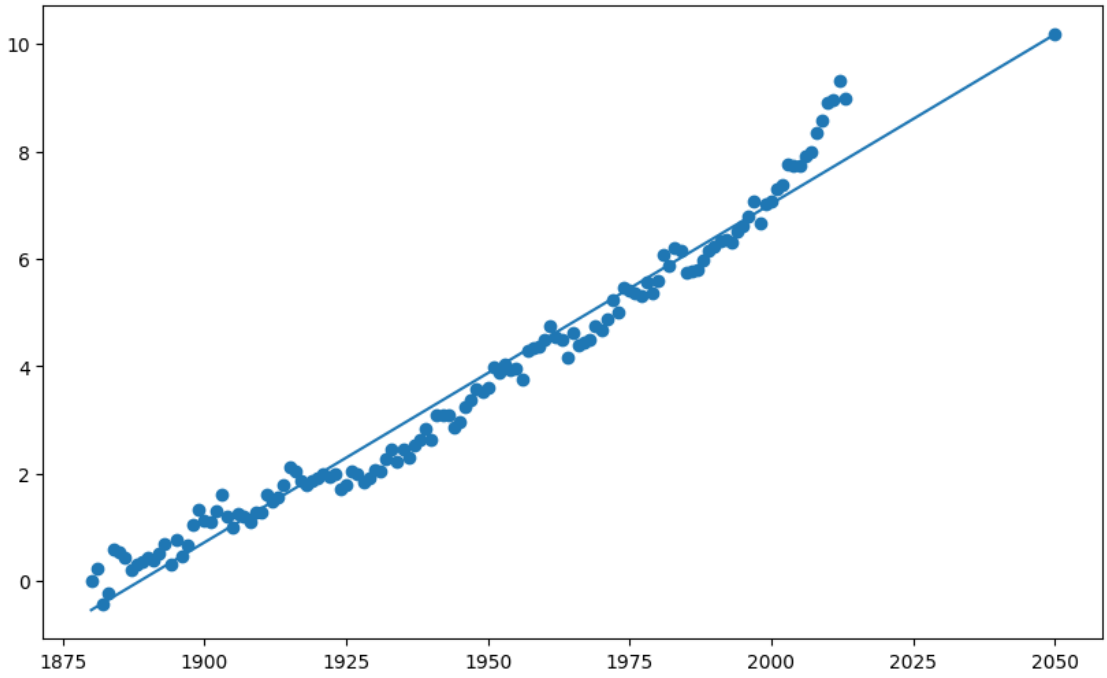
[5]:

	Year	CSIRO Adjusted Sea Level	Lower Error Bound	Upper Error Bound	NOAA Adjusted Sea Level
0	1880	0.000000	-0.952756	0.952756	NaN
1	1881	0.220472	-0.732283	1.173228	NaN
2	1882	-0.440945	-1.346457	0.464567	NaN
3	1883	-0.232283	-1.129921	0.665354	NaN
4	1884	0.590551	-0.283465	1.464567	NaN

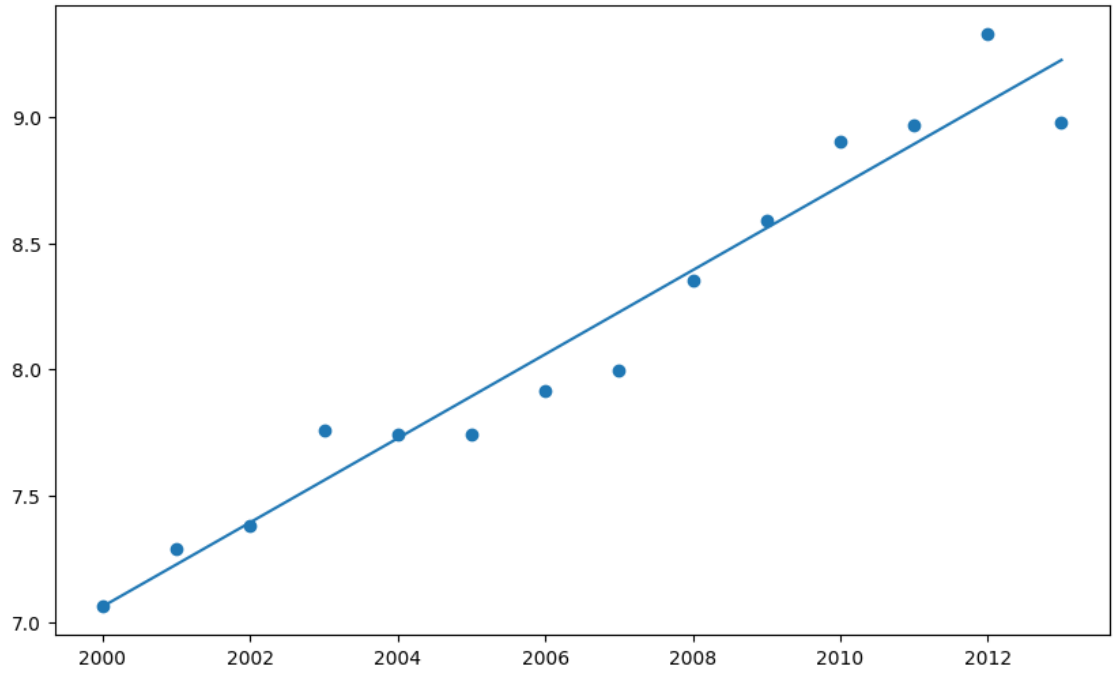
[25]:
```
slope, intercept, r, p, std_err = linregress(df["Year"], df["CSIRO Adjusted Sea␣
↪Level"])

def myfunc(x):
  return slope * x + intercept

slope, intercept, r, p, std_err = linregress(x_extended, y_extended)

seamodel = list(map(myfunc, df["Year"]))
fig = plt.figure(figsize=(10,6))

plt.scatter(x=df["Year"], y=df["CSIRO Adjusted Sea Level"])
plt.plot(df["Year"], seamodel)
plt.show()
```



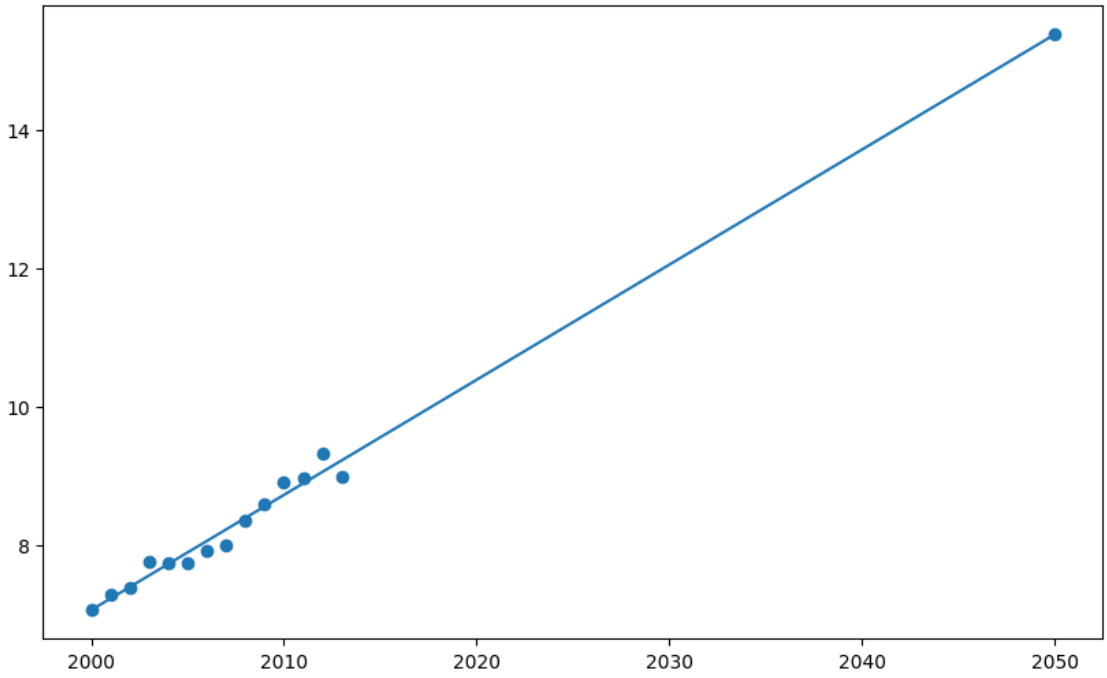
[26]:
```
slope, intercept, r, p, std_err = linregress(df["Year"], df["CSIRO Adjusted Sea␣
 ↪Level"])

def myfunc(x):
  return slope * x + intercept

x_extended = pd.concat([df["Year"],pd.Series([2050])])
y_extended = pd.concat([df["CSIRO Adjusted Sea Level"], pd.
 ↪Series([myfunc(2050)])])

slope, intercept, r, p, std_err = linregress(x_extended, y_extended)

seamodel = list(map(myfunc, x_extended))
fig = plt.figure(figsize=(10,6))

plt.scatter(x=x_extended, y=y_extended)
plt.plot(x_extended, seamodel)
plt.show()
```



[30]:
```
df2k = df[df["Year"] >= 2000]
slope, intercept, r, p, std_err = linregress(df2k["Year"], df2k["CSIRO Adjusted␣
 ↪Sea Level"])

def myfunc(x):
  return slope * x + intercept

slope, intercept, r, p, std_err = linregress(x_extended, y_extended)

seamodel = list(map(myfunc, df2k["Year"]))
fig = plt.figure(figsize=(10,6))

plt.scatter(x=df2k["Year"], y=df2k["CSIRO Adjusted Sea Level"])
plt.plot(df2k["Year"], seamodel)
plt.show()
```



[29]:
```
df2k = df[df["Year"] >= 2000]
slope, intercept, r, p, std_err = linregress(df2k["Year"], df2k["CSIRO Adjusted␣
 ↪Sea Level"])

def myfunc(x):
  return slope * x + intercept

x_extended = pd.concat([df2k["Year"],pd.Series([2050])])
y_extended = pd.concat([df2k["CSIRO Adjusted Sea Level"], pd.
 ↪Series([myfunc(2050)])])

slope, intercept, r, p, std_err = linregress(x_extended, y_extended)

seamodel = list(map(myfunc, x_extended))
fig = plt.figure(figsize=(10,6))

plt.scatter(x=x_extended, y=y_extended)
plt.plot(x_extended, seamodel)
plt.show()
```


14
12
10
8
2000
2010
2020
2030
2040
2050