Experiment 4: Implementation of Linear Regression

Source Code:

```
import numpy as np
import matplotlib.pyplot as plt
from matplotlib import style
style.use('ggplot')
import pandas as pd
xs=np.array([3,8,9,13,3,6,11,21,1,6])
ys=np.array([30,57,64,72,36,43,59,90,20,83])
def best_fit_slope_intercept(xs,ys):
 theta=(((np.mean(xs)*np.mean(ys))-np.mean(xs*ys))/((np.mean(xs)**2)-np.mean(xs**2)))
 b=np.mean(ys)-theta*np.mean(xs)
 return theta,b
theta,b=best_fit_slope_intercept(xs,ys)
plt.scatter(xs,ys)
y_predicted=theta*xs+b
plt.scatter(xs,ys,color='b')
plt.plot(xs,y_predicted)
plt.scatter(xs,y_predicted)
plt.show()
```

Output: