EXPLORER
ODIN-LANDING-PAGE
index.html
style.css

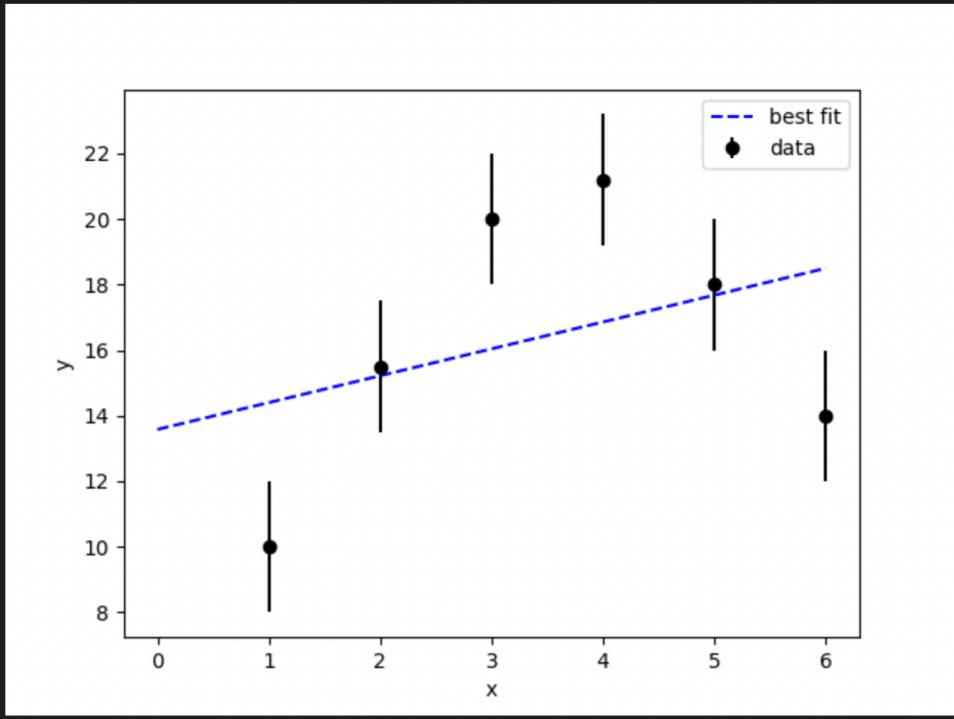
notebooks_ppf.ipynb
notebooks_hw4.ipynb

Users > thanhto > Desktop > notebooks_hw4.ipynb > # Starting point for a problem of HW 4 for P116C

+ Code + Markdown | Run All | Clear Outputs of All Cells | Outline ··· | Select Kernel

Python

```
best fit value of a:   0.8199999999996088
best fit value of b:   13.580000000027429
```




```
from scipy import optimize

# define the fitting function, in this case, a straight line:
# return y = a*x + b for parameters a and b
```

OUTLINE
TIMELINE

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Users > thanhto > Desktop > notebooks_hw4.ipynb > from scipy import optimize↵↵# define the fitting function, in this case, a straight line:↵# return y = a*x + b for parameters a and b↵def fit_func(x, a,

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```python
from scipy import optimize

# define the fitting function, in this case, a straight line:
# return y = a*x + b for parameters a and b
def fit_func(x, a, b, c):
    return a*(x**2)+b*x+c

# fill np arrays with the data to be fit:
x_data = np.array([1.0, 2.0, 3.0, 4.0, 5.0, 6.0])
y_data = np.array([10.0, 15.5, 20., 21.2, 18., 14.])
y_unc  = np.array([2.0, 2.0, 2.0, 2.0, 2.0, 2.0])

# plot the raw data
plt.errorbar(x_data, y_data,yerr=y_unc,fmt="ko",label="data")

# calculate best fit curve
par, cov = optimize.curve_fit(fit_func, x_data, y_data, sigma=y_unc)  # include error
# retrieve and print the fitted values of a ;and b:
fit_a = par[0]
fit_b = par[1]
fit_c = par[2]
print("best fit value of a:  ", fit_a)
print("best fit value of b:  ", fit_b)
print("best fit value of c:  ", fit_c)

# plot the best fit line:
xf    = np.linspace(0.0,6.0,100)
yf    = fit_func(xf,fit_a,fit_b, fit_c)
plt.plot(xf,yf,"b--",label="best fit")
plt.xlabel("x")
plt.ylabel("y")
plt.legend()
plt.show()
```

Python

OUTLINE
TIMELINE

```
best fit value of a:   -1.3982142917016842
best fit value of b:   10.60750004314891
best fit value of c:   0.5299999397876907
```