

DAY 5

[09.02.2026]

EXP – 16 to 2

```
Untitled0.ipynb
```

File Edit View Insert Runtime Tools Help

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Cell [3] 0s

```
import numpy as np
from scipy.stats import ttest_ind

A = np.random.normal(0.12, 0.02, 100) # design A
B = np.random.normal(0.15, 0.02, 100) # design B

t_stat, p_value = ttest_ind(A, B)
print("p-value:", p_value)
```

Cell [1] 0s

```
Theoretical quantiles
```

```
import numpy as np
from scipy.stats import t

drug = np.array([12,14,10,13,11,15,9,12,14,10])
placebo = np.array([5,6,4,7,5,6,4,5,6,5])

def confidence_interval(data):
    mean = np.mean(data)
    se = np.std(data, ddof=1)/np.sqrt(len(data))
    ci = t.ppf(0.975, len(data)-1)*se
    return mean-ci, mean+ci

print("Drug CI:", confidence_interval(drug))
print("Placebo CI:", confidence_interval(placebo))
```

The screenshot shows a Jupyter Notebook interface with a dark theme. The top bar includes the logo, file name "Untitled0.ipynb", and standard menu options: File, Edit, View, Insert, Runtime, Tools, Help. Below the menu is a toolbar with search, code, text, and run all buttons. The main area contains a code cell [2] with the following Python script:

```
import pandas as pd

age = [23,23,27,27,39,41,47,49,50,52,54,54,56,57,58,58,60,61]
fat = [9.5,26.5,7.8,17.8,31.4,25.9,27.4,27.2,31.2,34.6,42.5,28.8,33.4,30.2,34.1,32.9,41.2,35.7]

data = pd.DataFrame({'Age': age, 'Fat': fat})

print("Mean:\n", data.mean())
print("\nMedian:\n", data.median())
print("\nStandard Deviation:\n", data.std())

import matplotlib.pyplot as plt

data.boxplot()
plt.show()

plt.scatter(data['Age'], data['Fat'])
plt.xlabel("Age")
plt.ylabel("% Fat")
plt.show()

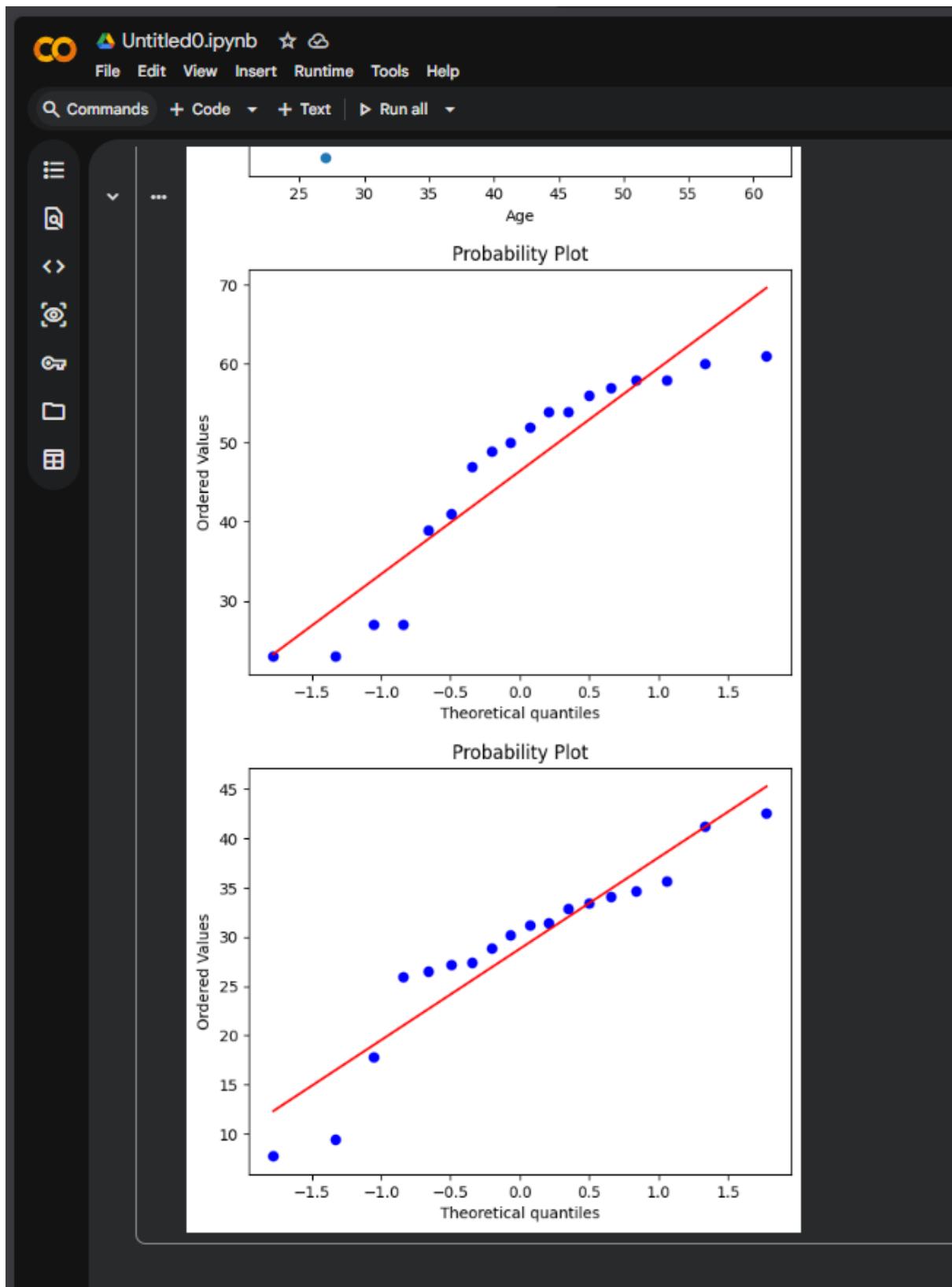
import scipy.stats as stats

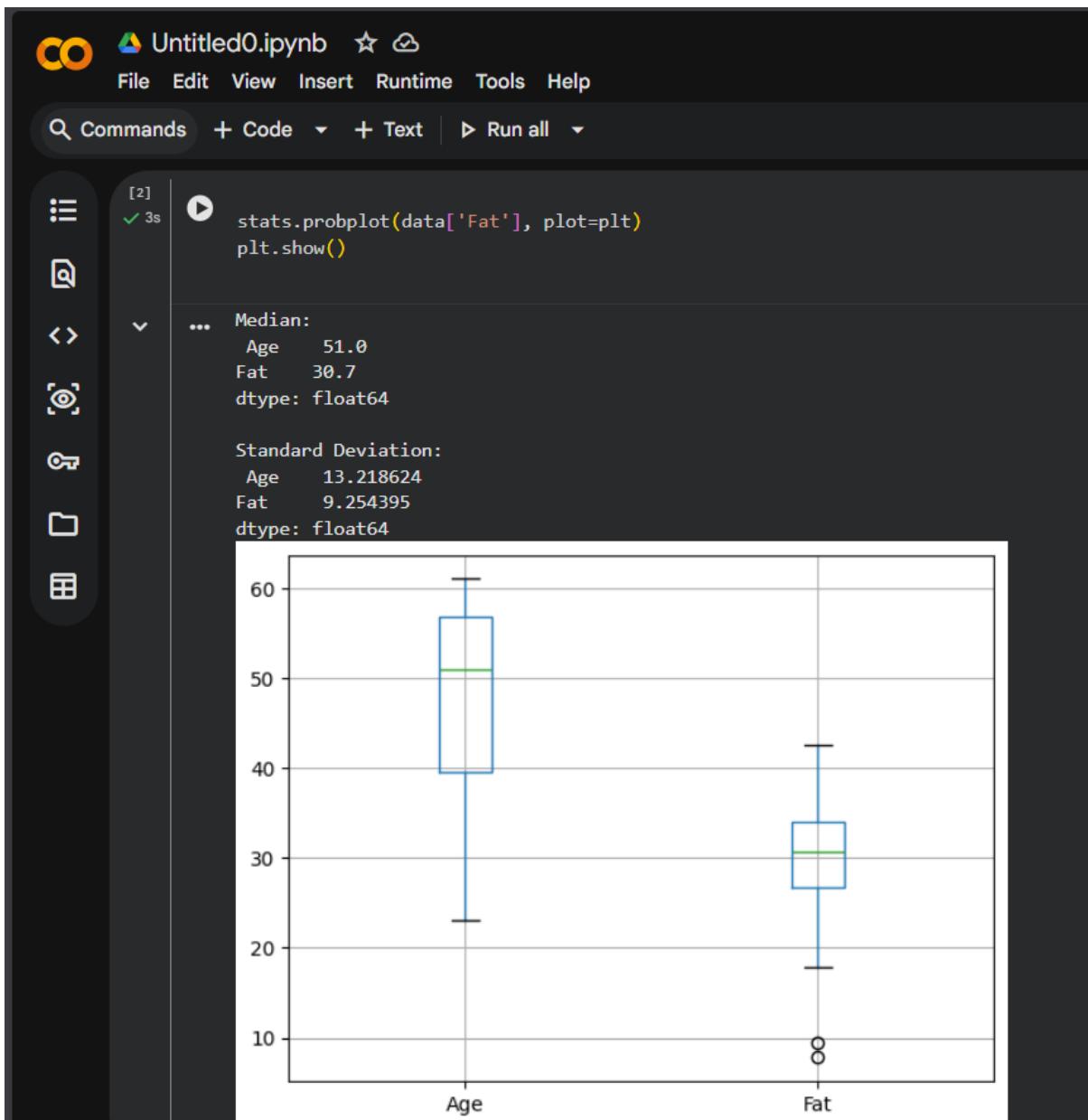
stats.probplot(data['Age'], plot=plt)
plt.show()

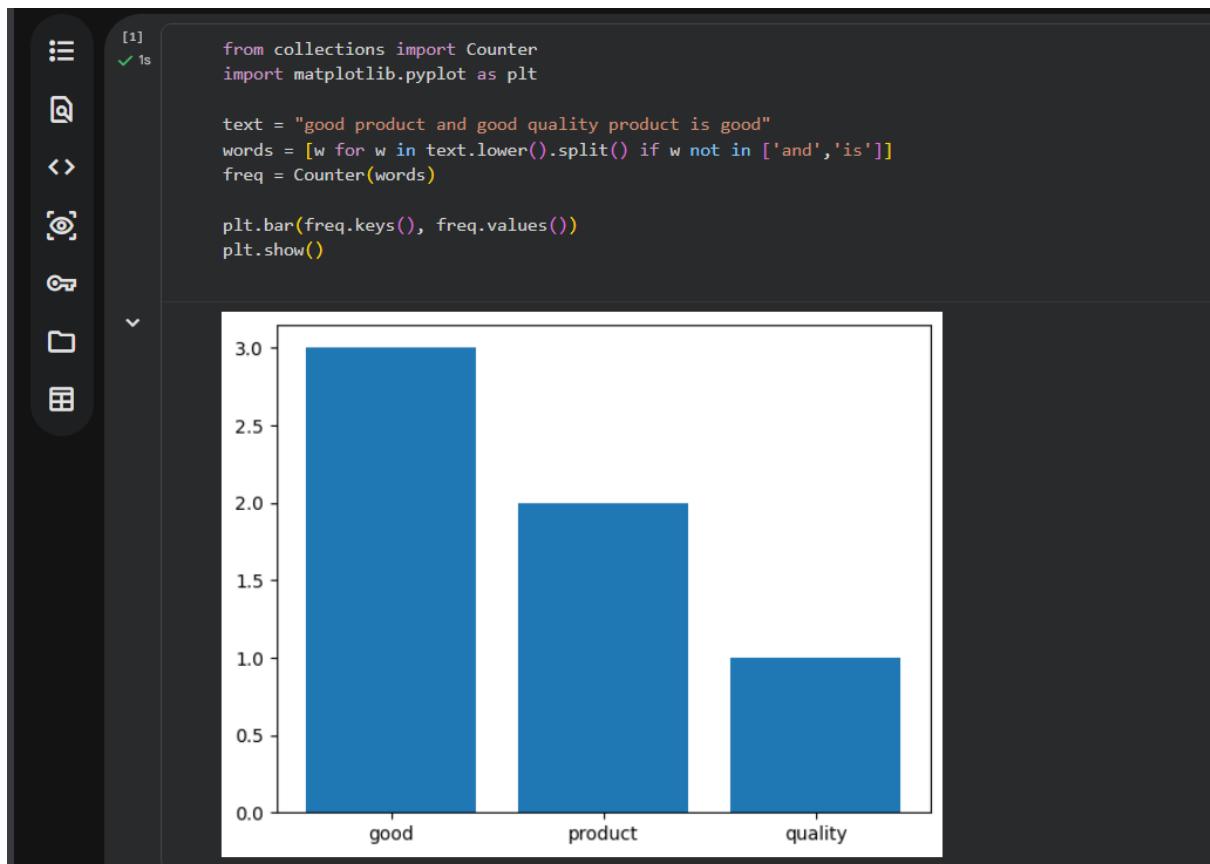
stats.probplot(data['Fat'], plot=plt)
plt.show()
```

Below the code cell, the output section shows the results of the mean calculation:

```
... Mean:
Age    46.444444
Fat    28.783333
dtype: float64
```







Untitled0.ipynb

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30 1
Name: count, dtype: int64

[11] 0s

▶ from collections import Counter

reviews = ["Good product", "Very good quality", "Product is good"]
words = " ".join(reviews).lower().split()
freq = Counter(words)
print(freq)

... Counter({'good': 3, 'product': 2, 'very': 1, 'quality': 1, 'is': 1})