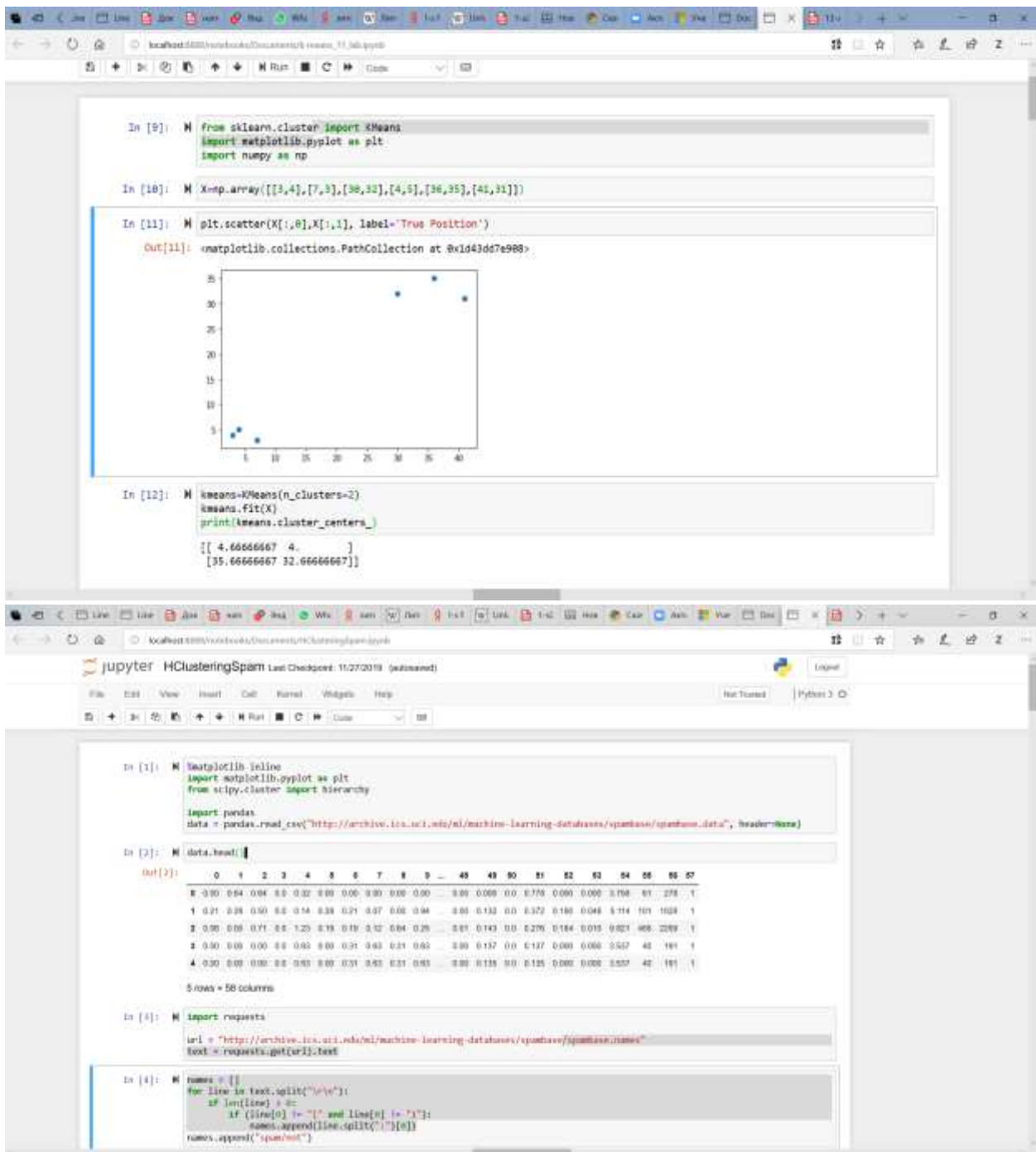


Лабораторное занятие 13. Задача на кластеризацию.

13-зертханалық сабақ. Кластерлеу әдісіне есеп.

Python және Anaconda да k-means, Hierarchical clustering әдістерне мысал. Сіз өз деректер қорына жасаныз!

На Python и Anaconde реализовать методы k-means, Hierarchical clustering. Ниже приведен пример. Каждый должен сделать для своего датасета.



```
url = "http://archive.ics.uci.edu/ml/machine-learning-databases/spoken/quepasec/names"
text = requests.get(url).text

In [4]: names = []
for line in text.split("\n"):
    if len(line) > 0:
        if (line[0] != "\t" and line[0] != "\n"):
            names.append(line.split("\t")[0])
names.append("ques/so")

In [5]: data.columns = names

In [6]: data.head()

Out[6]:
```

	word_freq_nuke	word_freq_address	word_freq_all	word_freq_3d	word_freq_our	word_freq_over	word_freq_remove	word_freq_items	word_freq_ords
0	0.00	0.04	0.04	0.0	0.32	0.00	0.00	0.00	0.0
1	0.21	0.28	0.50	0.0	0.18	0.28	0.21	0.00	0.0
2	0.00	0.00	0.71	0.0	1.23	0.19	0.19	0.12	0.0
3	0.00	0.00	0.00	0.0	0.03	0.00	0.11	0.03	0.1
4	0.00	0.00	0.30	0.0	0.03	0.00	0.14	0.01	0.3

5 rows x 10 columns

```
In [7]: features = data.iloc[:, :-1]
response = data.iloc[:, -1]

In [8]: import numpy as np
X = features.values
Y = response.values

In [9]: from scipy.cluster import hierarchy
Z = hierarchy.linkage(X[1:50, :])

In [10]: plt.figure()
dx = hierarchy.dendrogram(Z)
```