

```
In [1]: 1
        2 import numpy as np
        3 import scipy
        4 import matplotlib.pyplot as plt
        5 from sklearn.metrics import pairwise_distances
        6 #jaccard diss.
        7 from sklearn import manifold
        8 # multidimensional
        9 foods_binary = np.random.randint(2, size=(100, 10))
       10 #initial dataset
       11 print(foods_binary.shape)

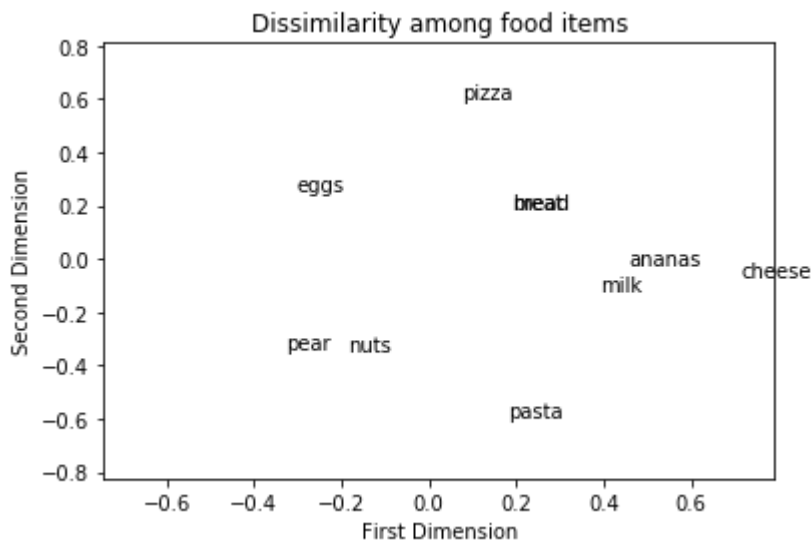
(100, 10)
```

```
In [2]: 1 dis_matrix = pairwise_distances(foods_binary, metric = 'jaccard')
        2 print(dis_matrix.shape)

(100, 100)
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\metrics\pairwise.py:1735: DataConversionWarning: Data w
jaccard
warnings.warn(msg, DataConversionWarning)
```

```
In [3]: 1 mds_model = manifold.MDS(n_components = 2, random_state = 123,
2 dissimilarity = 'precomputed')
3 mds_fit = mds_model.fit(dis_matrix)
4 mds_coords = mds_model.fit_transform(dis_matrix)
5
6 food_names = ['pasta', 'pizza', 'meat', 'eggs', 'cheese', 'ananas', 'pear',
7 plt.figure()
8 plt.scatter(mds_coords[:,0],mds_coords[:,1],
9             facecolors = 'none', edgecolors = 'none')
10 # points in white (invisible)
11 labels = food_names
12 for label, x, y in zip(labels, mds_coords[:,0], mds_coords[:,1]):
13     plt.annotate(label, (x,y), xycoords = 'data')
14 plt.xlabel('First Dimension')
15 plt.ylabel('Second Dimension')
16 plt.title('Dissimilarity among food items')
17 plt.show()
```



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In [ ]: 1
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