CO 544 Machine Learning and Data Mining
Lab 04

TODO 1:

Explain the reason to set, fig.subplots_adjust(hspace =1.0) in part (c).

This function is used to tune the subplot layout and adjust the amount of whitespace around a figure.

It has several parameters to change like;
   matplotlib.pyplot.subplots_adjust(*left=None*, *bottom=None*, *right=None*, *top=None*, *wspace=None*, *hspace=None*)

hspace changes the amount of height reserved for space between subplots, and it is expressed as a fraction of the average axis height.

hspace=1.0 means there is a space equal to the y-axis height between the two figures

TODO 2:

Visualize the 3D plot in part(e) in a different angle.

To change the viewing angle and elevation of the 3D plot, we can use view_init().
The 'azim' parameter specifies the azimuth angle in the X-Y plane, while 'elev' specifies the elevation angle in the z plane.

Code:

```
import matplotlib #importing Matplotlib module
import matplotlib.pyplot as plt #pyplot is a collection of command style functions
from mpl_toolkits import mplot3d #importing modules for 3D plotting
import numpy as np


fig = plt.figure() #creating a figure
ax = fig.add_subplot(111, projection='3d') #creating 3D subplot
```

```python
xs=([29, 24, 25, 23, 30 ,31, 26, 26, 30, 28])
ys=([ 7, 53 , 33 , 66, 1 ,11, 91, 51, 83, 6])
zs=([-25, -25, -19, -23,-6, -9, -11 , -11,-5, 14])

ax.scatter(xs, ys, zs, c='r', marker='o')

ax.set_xlabel('X Label')
ax.set_ylabel('Y Label')
ax.set_zlabel('Z Label')

print(ax.azim)   #to print the azimuth angle

ax.view_init(azim=90, elev=10)  #to change the visualization of 3D plot to a different
angle

plt.show()
```