**Assignment**

**1.** We are given the following two dimensional data points for a binary classification problem:

|  |  |  |  |
| --- | --- | --- | --- |
| **Pt. No.** | **X1** | **X2** | **y** |
| 1 | 1 | 0 | -1 |
| 2 | 0 | 1 | -1 |
| 3 | 0 | -1 | -1 |
| 4 | -1 | 0 | 1 |
| 5 | 0 | 2 | 1 |
| 6 | 0 | -2 | 1 |
| 7 | -2 | 0 | 1 |

A nonlinear transformation is used to transform the input vector to a transformed space Where and Load dataset 2 for this dataset. Create a scatter plot. Apply the kernel function to transform the data points. Again create a scatter plot to observe the changes.

**2.** Load dataset 1. Create a scatter plot. Apply a Gaussian kernel function and transform the data into 3D. Create a 3D scatter plot and observe the change.