**Assignment 4**

The no of next neighbors that are required for the model will be **5**

The Accuracy for the model for k = 5 will be **96.3 %**

The test error will be **0.037**

|  |  |  |
| --- | --- | --- |
| **K** | **Test Accuracy** | **Test error** |
| 1 | 0.923 | 0.077 |
| 3 | 0.962 | 0.038 |
| 5 | 0.963 | 0.037 |
| 7 | 0.926 | 0.074 |
| 9 | 0.923 | 0.077 |

**For KDE Model**

**The metrics that were considered as**

1. kernel = “**Gaussian**” for real, integer values and “**linear**” for categorical

2. bandwidth = **1.0**

3. metrics: “**Euclidean**”

4. leaf size: “**40**”

The accuracy obtained for the KDE model considered above is: **72.23 %**

Considering both the models, we can say that KNN (k=5) will work better than KDE model.