**INFO 6105 DSEM**

**ASSIGNMENT – 1**

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**Ans 1)** Nested for loop is used to tune the values of more than one hyperparameter.



**Ans 2)** Disadvantages of KNN:

KNN is an supervised learning and incredibly strong algorithm.

However, it is constrained in the following ways:

1. **It doesn’t work well with large dataset:**

Since KNN is a distance-based algorithm, it costs more to calculate the distance between existing point and new points, which reduces the performance of the algorithm.

1. **Doesn’t work well when there are high number of dimensions:**

Same as above, where there are more no. of dimensions, it becomes difficult for algorithm to calculate distance between each dimension.

1. **Sensitive to outliers and missing values:**

Since KNN is sensitive to outliners and missing values, We need to first impute the missing values and get rid of outliners.

1. **Need Scaling:**

Dataset needs to be standardized and normalized before applying KNN algorithm on it else it may generate wrong predictions.