**Assignment 3: Report**

**K Nearest Neighbor:**

**This algorithm compares 1 point to the rest of the points in the dataset, finds the lowest distance and assigns it that class.**

1. **I used math library to find the distance between datapoints.**
2. **Calculated the 4 lowest distances and my data had 4 attributes.**
3. **Selected the most common amongst that and chose that as the class.**

**K Mean Clustering:**

**This algorithm divides similar data points into clusters.**

1. **I randomly assigned 4 points as centroids.**
2. **Then I used 2 loops to calculate the lowest distance of each point in the data set with the centroids.**
3. **The point nearest to a centroid is added to that specific cluster.**
4. **Then the mean of the points in one cluster is calculated and the centroids are updated.**
5. **Find Mean of Data points in Cluster**

**-First loop of size three as three clusters**

**- Length of second loop is the number of points in the current cluster.**

**- It will add each attribute separately, calculate the mean and store it in an array.**

**- Then this array containing means will be considered as the new centroid.**

**- This will be repeated for the 2 other clusters to calculate new centroids.**

1. **The position of the centroids keeps updating until a constant value is obtained.**