**COMP450-ARTIFICIAL INTELLIGENCE (WEEK6-REPORT OF LABWORK)**

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In this week, our aim was different than last week. Last week, we learned Supervised Learning, classification and regression. This week our aim is learn unsupervised learning which is learn more about data. So we used clustering and k-means. As I understood, algorithms learn the structure from the input values in unsupervised learning. In supervised learning we hade labels but in this method we don’t have any labels. So in clustering method, the thing is discover and grouping the necessary data.

**TASK-1A**

In this task, I run the code in the given link.

**TASK-2A**

In this task, from dataset array I visualized images of these values 3,23,43,63,83,103.

**TASK-1C**

In this task , I changed 3-5 columns in 8x8 dimension array and I made them black so in my image I get a black stick in 3-5 columns.

**TASK-2A**

In this task, I used the given code. For clustering I used k-means. So I showed scores and k-mean values in the screen. I did this for in range 2,21.

**TASK-2B**

In this task,I stored the calculated values of Silhouette score in an array.

**TASK-2C**

After I stored the calculated values, I ploted these Silhouette scores with respect to their k values (a 2-d plot is required).

**TASK-3A**

The train\_test\_split function splits data set to training set and test set. For train the model purpose, our data set is training set . For test the trained model purpose, our data set is test set.