## **BONUS PROBLEM**

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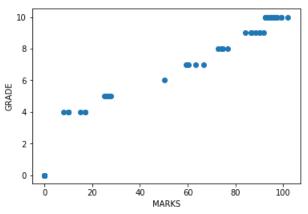
## ALGORITHM USED:- K MEANS CLUSTERING

K-means clustering is one of the simplest and popular unsupervised machine learning algorithms.

The objective of K-means is simple: group similar data points together and discover underlying patterns. To achieve this objective, K-means looks for a fixed number (k) of clusters in a dataset.

## CLUSTERING IN OUR DATASET

Clusters are made according to diversity in marks There will be 8 clusters representing all the grades.



## Result

Excel sheet with grades is attached with mail (grades.xlsx) Python code for clustering is also attached with mail (optimization.py)

To run the code save optimization.py and opt.xlsx in same directory .