**Data Science for Engineers**

**Lab Report 12**

**Hafiz Ahmad**

**19l-1316**

**Section-7A**

Clustering Analysis

**INTRODUCTION:**

There is a useful linear relationship between y and at least one of the four predictors in the model. The general purpose of cluster analysis in marketing is to construct groups or clusters while ensuring that the observations are as similar as possible within a group. The hierarchical cluster analysis follows three basic steps: calculate the distances, link the clusters, and choose a solution by selecting the right number of clusters. First, we have to select the variables upon which we base our clusters. Streaming services often use clustering analysis to identify viewers who have similar behavior. For example, a streaming service may collect the following data about individuals: Minutes watched per day. Total viewing sessions per week.

**OBJECTIVES:**

• To get familiarized with clustering analysis

**Application:**

The Clustering analysis is broadly used in many applications such as market research, pattern recognition, data analysis, and image processing. Clustering can also help marketers discover distinct groups in their customer base. And they can characterize their customer groups based on the purchasing patterns. Clustering technique is used in various applications such as market research and customer segmentation, biological data and medical imaging, search result clustering, recommendation engine, pattern recognition, social network analysis, image processing, etc.

**Issues:**

we never find any issue regarding this lab.

**Conclusion:**

In this lab we understand Cluster analysis is an exploratory analysis that tries to identify structures within the data. Cluster analysis is also called segmentation analysis or taxonomy analysis. More specifically, it tries to identify homogenous groups of cases if the grouping is not previously known.