

## Introduction to K-Means Clustering with Google Colab

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Welcome to the "Introduction to K-Means Clustering with Google Colab" lab! This session is designed to provide you with a practical understanding of the k-means clustering algorithm, a cornerstone technique in unsupervised machine learning. Through hands-on exercises in a live coding environment, you'll learn how to implement, visualize, and interpret k-means clustering. This lab is perfect for beginners in data science as well as those looking to refresh their understanding of an essential machine learning algorithm.

**Lab Access:** To begin the lab, access the interactive Google Colab notebook here: [Start the K-Means Clustering Lab](#)

### What You Will Learn:

- **Understanding K-Means Clustering:** Grasp the basics of the k-means clustering algorithm, including how it works and when to use it.
- **Implementing the Algorithm:** Step through the process of coding the k-means algorithm from scratch in Python.
- **Visualizing Clusters:** Learn to visualize the clustering process and the results using matplotlib to gain insights into the data.
- **Interactive Experiments:** Adjust parameters and initial conditions within the Colab notebook to see how they affect the outcome of the clustering.

### Getting Started:

Click on the link above to open the Google Colab notebook. Ensure you are logged into your Google account to interact with the notebook and save your progress. Follow the step-by-step instructions in the notebook to complete the lab. Each section is designed to build on the previous one, culminating in a deep understanding of k-means clustering by the end of the session.

Enjoy the lab and happy learning!