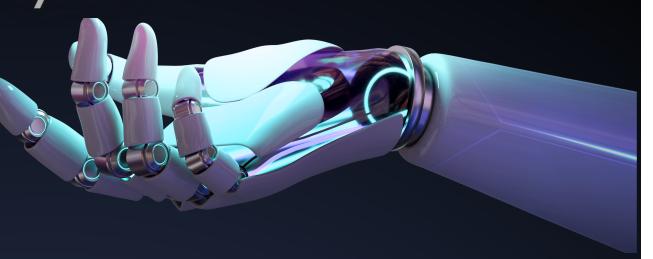


# COURSES RECOMMENDATION System

### INTRODUCTION

This project aims to analyze and organize Coursera course data using data mining and machine learning techniques. It involves developing a course recommendation system for Coursera based on text analysis and identifying similarities between courses. Additionally, the project includes data visualization using tools like Streamlit and Matplotlib to provide an interactive and visual interface that helps users explore patterns and trends within the data.



### OBJECTIVES

The main objectives of the project are:

- 1• Data Cleaning and Preprocessing
- 2• Course Recommendation
- 3• Classification and Clustering
- 4• Data Visualization
- 5• Interactive Interface

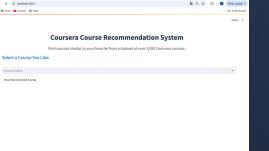
### TECHNIQUES

- 1• CountVectorizer
- 2• Cosine Similarity
- 3• KMeans
- 4• Stemming
- 5• Tokenization

### PROCESS

- 1• Data Preprocessing:  
Text Cleaning  
Data Integration  
Removing Duplicates
- 2• Feature Extraction:  
CountVectorizer  
Cosine Similarity
- 3• Classification and Clustering:  
KMeans
- 4• Data Visualization
- 5• Interactive System Deployment:

### GUI



### VISUALIZATION

Word Cloud for 'tags' (Skills column)

Histogram for Numeric Data

Boxplot for Numeric Data

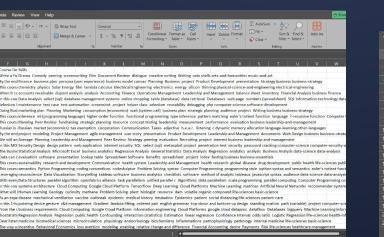
Countplot for 'cluster' (After KMeans clustering)

Correlation Heatmap for Numeric Columns

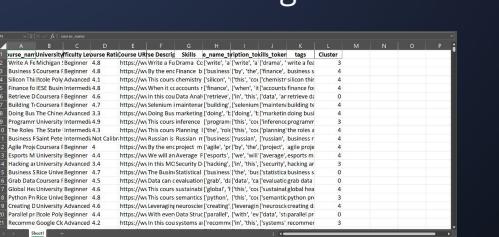
Pairplot for Numeric Data

### Data set

Before Cleaning



After Cleaning



Ahmed Abdelrahman Mohamed 221100071  
 Sarah Mostafa Abdelrahman 221100899  
 Shrouq Hesham salman 223108628  
 Omar Tarek Abo Elela 221101186  
 Aser Mohamed Ali Mahmoud 222102487  
 Kareem Wael Mohamed 221100389

### CONCLUSION

This project demonstrates how data mining and machine learning techniques can extract patterns and provide personalized recommendations. The recommendation system enhances user experience by suggesting relevant courses based on preferences. Additionally, the visual analyses provide valuable insights into trends and skills in e-learning platforms like Coursera.