# Association Rules Analysis

This repository contains a Jupyter Notebook that demonstrates the implementation of \*\*Association Rule Mining\*\* using popular techniques like Apriori or FP-Growth. Association rule mining is a machine learning technique used to discover relationships between variables in large datasets.

## Features

- Implementation of association rule mining techniques.

- Analysis of frequent itemsets and their relationships.

- Visualization of association rules and insights.

## Requirements

The following Python libraries are required to run the notebook:

- pandas

- numpy

- matplotlib

- seaborn

- mlxtend (for Apriori and association rule methods)

You can install these dependencies using pip:

pip install pandas numpy matplotlib seaborn mlxtend

## How to Use

1. Clone the repository:

git clone https://github.com/yourusername/association-rules-analysis.git

2. Open the Jupyter Notebook:

jupyter notebook AssociationRules.ipynb

3. Follow the steps in the notebook to load the dataset, preprocess the data, and run the association rule analysis.

## Dataset

The notebook expects a transactional dataset in a structured format. Replace the placeholder dataset in the notebook with your own, if needed.

## Outputs

- Frequent itemsets and their support values.

- Association rules with metrics like confidence, lift, and support.

- Visualizations of the association rules.

## Applications

- Market Basket Analysis

- Recommendation Systems

- Customer Segmentation