

# MARKET BASKET INSIGHTS

## Project Overview

Market Basket Analysis is a strategic data mining technique used by retailers to enhance sales by gaining a deeper understanding of customer purchasing patterns. This Jupyter Notebook guides you through the process of performing Market Basket Analysis, visualizing the results, and understanding the associations between items in customer transactions.

## Dataset Information

The dataset used in this project is stored in the file "Assignment-1\_Data.xlsx." It contains information related to market transactions, including items purchased, quantity, date, price, customer ID, and country.

## Installation

Before running the Jupyter Notebook, you need to have Python and Jupyter Notebook installed on your system. You can install Jupyter Notebook using Anaconda or pip. Here are the installation steps:

### Install Anaconda (Recommended):

Download and install Anaconda from Anaconda's website.

Open the Anaconda Navigator and launch Jupyter Notebook.

Install Jupyter Notebook via pip:

use pip, open command prompt and run:

- `pip install notebook`

Launch Jupyter Notebook by running the following command in your terminal:

```
jupyter notebook
```

## Usage

Follow these steps to use the Jupyter Notebook for Market Basket Analysis:

Clone this repository to your local machine using the following command:

```
git clone <repository-url>
```

Navigate to the project directory:

```
cd Market-Basket-Analysis-Project
```

Start Jupyter Notebook by running the following command:

### **jupyter notebook**

Open the Jupyter Notebook file `Market_Basket_Analysis.ipynb`.

Execute the cells in the notebook to perform Market Basket Analysis, preprocess the dataset, and visualize the results.

### **Notebook Contents**

**The Jupyter Notebook (`Market_Basket_Analysis.ipynb`) includes the following sections:**

#### **Loading the dataset**

- Initial exploration and preprocessing
- Converting items to boolean columns
- Association Rule Mining using Apriori algorithm
- Visualizing Market Basket Analysis results
- Follow the notebook step by step to understand and implement Market Basket Analysis.

#### **Results and Visualization**

The notebook provides interactive visualizations of the Market Basket Analysis results, including scatterplots, network graphs, and sunburst charts. These visualizations help you understand the relationships between items and the support, confidence, and lift values of association rules.