Recommender System Machine Learning Project for Beginners-2
Project Overview

Business Overview

While surfing any of the eCommerce platforms, you must have landed upon the frequently bought together section. Many of the business use this to increase the sales which eventually increases revenue. Did you ever wonder how do they do it? The technique to understand customer purchasing patterns based on the historical data is known as Market Basket Analysis, also known as Association analysis. In other words, Market Basket Analysis allows retailers to identify relationships between the items that people buy. As a part of series of Recommender system projects, this project covers a wide variety of Market basket analysis with the implementation of various rules in Python. An extensive Exploratory Data Analysis (EDA) has also been discussed.
If you haven't already visited, here is the first project of the series https://www.projectpro.io/project-use-case/recommendation-system-project-for-beginners.

Aim

To carry out Exploratory Data Analysis and implement Market Basket Analysis.

Data Description

The dataset is a transnational data set containing all the transactions occurring between the years 2010 to 2011 for a UK-based and registered non-store online retail. The company mainly sells unique all-occasion gifts with maximum wholesaler customers. The dataset contains information about 500K customers over eight attributes.

Tech Stack

- ➔ Language: Python
- ➔ Libraries: pandas, numpy, seaborn, matplotlib, collections, mlxtend, wordcloud, networkx

Approach

1. Data Description
2. Exploratory Data Analysis
    a. Customer insights

    b. Date time analysis
    c. Free items
    d. Item level analysis
    e. Wordcloud
3. Data Cleaning
    a. Missing values detection
    b. Outlier detection and treatment
4. Market Basket Analysis
    a. Top 10 first choices
    b. Trending items
    c. Deals of the day
5. Apriori algorithm
    a. Implementation by using mlxtend
    b. Visualization using networkx

Project Takeaways

1. What is Exploratory Data Analysis(EDA)?
2. Why use Exploratory Data Analysis?
3. How to clean the data and prepare it for analysis?
4. Understanding Market Basket Analysis
5. Understanding customer insights by visualization
6. How to perform the date-time and free items analysis?
7. How do you decide the deals of the day?
8. What are the trending items?
9. How to do the item-level analysis?
10. Understanding Association rules
11. Understanding the Apriori algorithm
12. Preparing data for Apriori algorithm
13. Implementation of Apriori algorithm by using mlxtend
14. Validation of Association rules
15. Visualization of association rules using mlxtend