# Karnataka Law Society’s

**GOGTE INSTITUTE OF TECHNOLOGY**

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**(Autonomous Institution under Visvesvaraya Technological University, Belagavi) (APPROVED BY AICTE, NEW DELHI)**

DEPARTMENT OF MASTER COMPUTER APPLICATIONS



Project Title

“Market Basket Analysis”

**Submitted by**

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**Under the Guidance of**

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**1)Introduction:**

Market Basket Analysis (MBA) also known as association rule. It works on the concept of data mining technique that can be used in various fields, such as marketing, bioinformatics, education, nuclear science etc. The frequently buying habit of the customer can be inferred as behavior or pattern. The main aim of MBA in marketing is to provide the information to the retailer to understand the purchasing pattern of the customers, which can help the retailer in correct decision making.

Using market basket analysis, knowledge of what are the items offtenly purchased together by the customers, placing the most frequently-purchased items in one catalogue.

## Literature Survey:

Data mining involves many steps such as selection, pre-processing, transformation, data mining and interpretation.

## 2.1) Existing system:

The existing system works on static data and they do not capture changes in data with time.

The owner uses the ledgers or excel sheet to maintain his transactional data.

## 2.2) Proposed system:

The proposed system in MBA works on APRIORI Algorithm.

1) Support

2) Confidence

3) Lift

**Association Rule-**

The Association analysis measures the strength of co-occurrence between one item and another. The objective of this algorithm is to predict the co-occurrence of an item and find the frequent patterns in these transactions.

**Association Rule Mining-**

Given a set of transactions, find rules that will predict the occurrence of an item based on the occurrences of other items in the transaction.

## System requirements:

### **Hardware requirements:**

* Laptop or PC
* Minimum 4GB RAM
* Minimum 2Ghz processor
* Minimum 10GB Hard-disk

### **Software requirements:**

* Jupyter Notebook
* OS –Windows 10

### **Technologies used:**

* Python
* Machine Learning

## Modules:

* Collecting external dataset
* Removing duplicate data
* Extracting required dataset
* Applying constraints on processed data

## Conclusion:

The really nice aspect of association analysis is that it is easy to run and relatively easy to interpret. If you did not have access to mlxtend and this association analysis, it would be exceedingly difficult to find these patterns using basic Excel analysis. With python and mlxtend, the analysis process is relatively straightforward and since you are in python, you have access to all the additional visualization techniques and data analysis tools in the python ecosystem.