**Business Objective**

To improve the business and popularity of the heritage book store Kitabi Duniya.

**Business Constraints**

Store should acknowledge that business is on the verge of going out of business and should be open to modern ways of business. The process of Change should be imbibed by all the associates in the store(generally traditional workstyle organizations oppose such changes).

**Data** **Dictionary** : Book dataset consists of details of customer preferences in various categories of books while purchasing books.

**Interpretations**

Association rules for books dataset can be understood by reviewing the attached file books\_rules.csv

First rule states that when YouthBks(Antecedent) and ArtBks(Consequent) are bought together, it shows good association with the support of 0.10, confidence value = 0.4080, which implies out of all the transactions with YouthBks 40.80% of the transactions readers will buy ArtBks. This combination shows lift of 1.69 shows the ArtBks are bought 1.69 times more by the readers buying YouthBks as compared when its bought alone.

Second rule comes up with the combination of ChildBks, GeogBks, YouthBks & CookBks. This association shows a support of 0.083, stating that ChildBks, GeogBks, YouthBks are bought 83 times out of 1000 transactions. Confidence here is 0.8383 implying out of all the transactions with ChildBks, GeogBks, YouthBks 83.83% transactions will have CookBks too. Lift value is 1.945 suggesting CookBks are bought 1.945 times more with this set as compared to its default sale.

Third rule talks about itemsets GeogBks, DoItYBks & CookBks with support of 0.108, a high confidence of 0.818 and Lift of 1.899 and shows a good association amongst these itemsets.

**Plot interpretations**:

On plotting the itemsets vs Support, it is depicted that CookBks (Support = 0.43)& ChildBks (Support = 0.42)are purchased most as compared to other books. If we consider top 11 frequent itemsets ChildBks & GeogBks, ((Support = 0.195), GeogBks & CookBks (Support = 0.192) and DoItYBks & CookBks (Support = 0.187) stand at bottom 3 positions respectively.

**Conclusion** : Kitabi Duniya should adopt the rules formulated in the books\_rules.csv file, and plan the placement of the books considering the association of various books sets to improve their business and growin todays’ competitive world.