



# Day 53

## DIY - Solution

### Q1. What does “Association Rules Mining” mean?

**Answer:** Association rule mining is a procedure that is meant to find frequent patterns, correlations, associations, or causal structures from data sets found in various kinds of databases, such as relational databases, transactional databases, and other forms of data repositories.

Given a set of transactions, association rule mining aims to find the rules that enable us to predict the occurrence of a specific item based on the occurrences of the other items in the transaction.

### Q2. What are the main applications of Association Rules Mining?

**Answer:** The main applications of association rule mining are:

**Sales data analysis** is to analyze the association of purchased items in a single basket or single purchase as per the transaction data.

**Cross marketing** is working with other businesses that complement your own, not competitors. For example, vehicle dealerships and manufacturers have cross-marketing campaigns with oil and gas companies for obvious reasons.

**Catalog creation** is the selection of items in a business catalog that are often designed to complement each other so that buying one item will lead to buying another. As a result, these items are complementary or closely related.

### **Q3. What do you mean by Confidence and Support in Association Rules Mining?**

**Answer:**

The confidence of an association rule is a percentage value that shows how frequently the rule occurs among all the groups. It indicates how reliable the rule is. The higher the value, the more likely the rule can be considered true.

The support of an association rule is the percentage of groups that contain all the items listed in that association rule. This value shows how often the rule is valid among all the other groups that were considered.

### **Q4. What do you mean by Lift and Conviction in Association Rules Mining?**

**Answer: Lift:** The lift value is a measure of the importance of a rule. It is a ratio of the calculated confidence of the rule and the expected confidence of the rule.

**Conviction:** It is a measure that helps to judge if the rule happened to be there by chance or not. It was introduced as an alternative to confidence, which can't capture the direction of an association. Conviction is a comparison of the probability of the appearance of a rule.

## Q5. What are the drawbacks of Association Rules Mining?

**Answer:** Some of the main drawbacks of Association Rule Mining algorithms are:

1. Too many parameters: Finding appropriate parameters for the mining algorithm is difficult.
2. Discovering too many rules.
3. Discovered rules are difficult to understand.
4. Poor algorithmic performance.

