

# HW 7

## Theoretical Questions

- What is Market Basket Analysis
- Absolute Support vs Relative Support
- How many Association Rules do you know
- Closed Patterns vs Max-Patterns
- What is Binomial Distribution
- How do Join and Prune steps work in the Apriori algorithm
- Examples 6.3 and 6.4 from “Data Mining: Concepts and Techniques” book
- Pseudo-Codes for Apriori algorithm
- Implement Apriori algorithm
- Improving the Efficiency of Apriori (Optional)
- Frequent Pattern-Growth (Optional)
- FP-Growth vs Apriori
- Mining Closed Frequent Patterns and Max Patterns (Optional)
- What is the Null-Invariant Measure
- What is the Imbalance Ratio
- Examples 6.10 and 6.11 from “Data Mining: Concepts and Techniques” book

## Students Presentation Topic

- Design of Experiment (DOE)
- A/B testing

## Exercise 1

Suppose Walmart has  $10^4$  kinds of products:

- What is the chance to pick up one product?
- What is the chance to pick up a particular set of 10 products?
- What is the chance this particular set of 10 products to be frequent  $10^3$  times in  $10^9$  transactions?

## Exercises

**Book:** Data Mining: Concepts and Techniques

p. 274, Exercises: 6.6 – 6.8 (only related to Apriori)