WHAT IS ASSOCIATION RULE MINING?
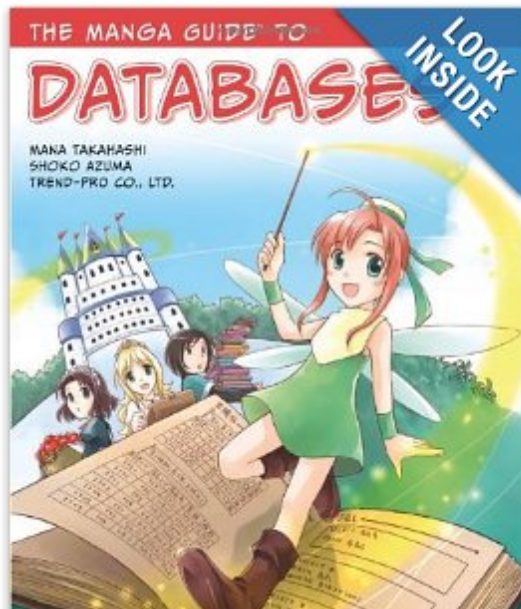
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WHAT IS FREQUENT PATTERN ANALYSIS?

Frequent pattern

What products do people frequently buy together?

What other products would people buy if they bought a laptop?

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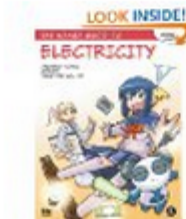# Frequently Bought Together

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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.

Market-Basket Transactions

TID	Items
1	Bread, Milk
2	Bread, Diaper, Beer, Eggs
3	Milk, Diaper, Beer, Coke
4	Bread, Milk, Diaper, Beer
5	Bread, Milk, Diaper, Coke

Example of association rules:

{Diaper} $\rightarrow$ {Beer}
{Milk, Bread} $\rightarrow$ {Eggs, Coke}
{Beer, Bread} $\rightarrow$ {Milk}

Implication means co-occurrence, not causality!

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ASSOCIATION RULE (AR) MINING

Textbook chapter 6 requires some background knowledge in undergraduate computer science courses such as data structure.

Requirement for this class: Learn the basic concepts about AR and the main idea of the Apriori Algorithm.

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MORE APPLICATIONS

Product recommendation

E.g., Amazon.com

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Web log (clickstream) analysis

DNA sequence analysis

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