

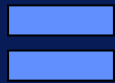
Association Analysis

After this video you will be able to..

- Explain what association analysis entails
- List some applications of association analysis
- Define what an item set is

Association Analysis

Goal: Find rules to capture associations between items.



Association Analysis Examples

- Have sales on related items often purchased together
- Recommend items based on purchase/browsing history
- Identify effective treatments to patients

Analysis Association Overview

ID	Items
1	diapers, bread, milk
2	bread, diapers, beer, eggs
3	milk, diapers, beer, butter
4	bread, milk, diapers, beer
5	bread, milk, diapers, butter

Item Sets

$\{\text{bread, milk}\} \Rightarrow \{\text{diapers}\}$
 $\{\text{milk}\} \Rightarrow \{\text{bread}\}$

Rules

If bread and milk
are bought, then
diaper is also
bought

Association Analysis Steps

1. Create item sets

{bread}

{butter}

{bread, milk}

{milk, beer}

2. Identify frequent item sets

{bread}

{bread, milk}

3. Generate rules


{bread, milk} => {diapers}

Association Analysis Notes

Unsupervised

Usefulness of rules
is subjective

Need to determine
how to use rules



Interpretation and analysis required to
make sense of resulting rules!

Association Analysis Summary

- Find rules to capture associations between items
- Rules have intuitive appeal
- Resulting rules require analysis and interpretation using domain knowledge

