Network Science

Networks Based on Co-Occurrences

Part B

Lab 05

Lecture 13

Today's topics

- Case Study: Cultural Domain Analysis
- Case Study: from Products to Projects

Semantic and Product Networks

co-occurrence: the property of items being in the same place at the same time

here edges are **implicit**:
you have to deduce, extract, calculate them from other data

two examples:

semantic networks

product networks

Semantic Networks

nodes are terms: words, word stems, word groups or concepts

links connect terms that:

i) are commonly used together ("complex" — "networks")

ii) describe the same property ("red" — "blue")

iii) are semantically comparable (synonyms: "program" - "app"
hypernyms: "pet" - "cat"
antonyms: "break" - "restore")

Semantic Networks are used by Knowledge specialists for semantic domain analysis

Go to notebook:

"11_ Cultural Domain Analysis"

Product Networks

Retail Networks:

nodes are items purchased by individuals

links represent co-occurrence of items in customers in their "shopping baskets"

items are complements

weights: frequency of co-purchasing

Go to notebook:

"12_Products"