

Build more profitable

Web sites

Sell more in your e-store when you understand clickstreams on your site.

Achieve smarter CRM

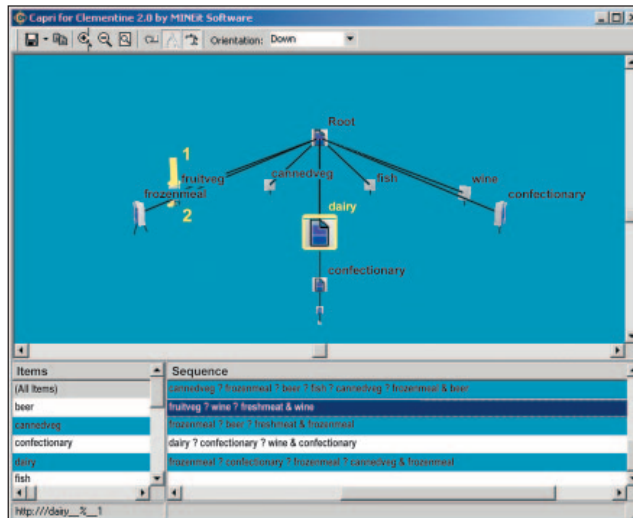
Know the order of contact over time that leads to more profitable customer relationships.

Deliver better service

Anticipate what citizens want next when you understand the likely order of requests.

Detect fraud and non-compliance

Uncover fraud and abuse when you examine unusual behavior patterns.



With Capri, you can browse sequences in the traditional text format and display items and their order with interactive visualization. This example shows the sequences that begin with the grocery item "fruitveg."

Know what events will happen next by discovering sequences in your data

Go beyond association rules to identify sequences in your data

Events in your business happen over time. To understand the order of events in your data, you need sequence detection — the discovery of knowledge in ordered data. Clementine users can take advantage of ordered data to discover trends using Capri, a sequence association algorithm from CorporateIntellect.

Time stamping is the most common form of ordering. Time-stamped data — such as Web site visits, transactions, form filings and customer additions to a database — hold sequential patterns. You can easily unlock this data using sequence detection. For example, get the knowledge you need to improve Web site design, increase e-store sales and deliver online services more effectively by uncovering clickstream patterns.

Know the order of events leading to profitable relationships

- Discover which paths on your Web site lead to purchases, exits and other key events
- Understand purchase behaviors over time to improve the shopping experience, maximize purchases on return visits and increase customer lifetime value
- Learn the right mix of services and information to offer citizens via your e-government solution
- Determine which actions keep customers loyal or cause them to turn to your competitors
- Develop more personalized cross-selling strategies

Understanding sequences: the key to making the right offer

Each customer or citizen relationship consists of a series of interactions. Therefore, the order in which

people purchase goods, navigate your Web site or request information matters. Data miners often use association rules and market basket analysis to predict behavior. For example, market basket analysis may tell you that if someone buys fresh vegetables and vitamins, he or she will also buy cheese. Though important, this association is lost if the cheese is purchased at a later date. Simple association can't tell you *when* a behavior occurs.

Using Capri, you can uncover relationships that span multiple transactions. When you know the order of events over time, you'll know what your customers or citizens are likely to want *next*, so you can make the right offer or recommend the right service.

Discover behavior patterns leading to fraud

You can also use Capri to uncover fraudulent and non-compliant behavior. Examine claims, form submissions or credit card purchases over time to learn which sequence of events tends to be suspicious. Investigate suspect behavior, such as procedures claimed in an unusual order, and stop fraud before it diminishes your budget and compromises your program and service quality.

Capri and Clementine: ensure you have the complete tools for successful data mining

When you use Capri with Clementine, you increase the power of the leading data mining workbench. Use a full range of data mining techniques alongside Capri's sequence analysis to get the best ROI from your projects.



Understand navigation paths on your Web site and anticipate your visitors' next click: use Capri to discover the likelihood that visitors who go from the home page to the e-store will go to the checkout page next.



The Capri algorithm: how it works

The Capri algorithm analyzes your data in three phases to determine the sequence:

- **Apriori phase:** lists all items that occur frequently enough (given minimum support) to be part of a sequence
- **Discovery phase:** builds trees, one for each possible starting item, showing all existing sequences and caching support
- **Pruning phase:** eliminates sequences that “overlap,” based on user settings

Capri takes you beyond association rules and empowers you to discover items or events that occur together across time. You start by choosing a field (use attributes such as ID_number, account_number or IP_address) in a dialog to tell Capri which records go together to form a sequence. Each distinct value of the field (such as a particular account_number) defines a sequence of records, and each sequence forms an example from which Capri can work. Capri also enables you to incorporate what you already

know about sequences. For instance, you can specify features such as the start and end items for a sequence, sequence length and time constraints (such as maximum time allowed between items in the sequence).

Capri results

Capri produces results showing the common sequence within user-specified constraints. For example, your results could show that:

- Users commonly cycle several times between the home page and the index page
- Customers commonly buy batteries after purchasing a small electrical item
- If events A, B and C occur in that order, events D, E and F always follow

System requirements

- Clementine 7.0 or later
- Windows 98, NT 4.0 or 2000
- Double-byte enabled

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