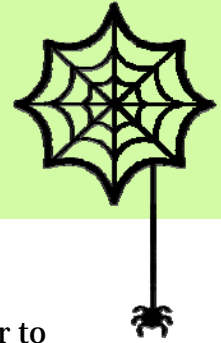


# SPIDER: a Schema Mapping Debugger



## Overview

SPIDER is a tool for debugging schema mappings for data exchange, similar to debuggers for programming languages. It is implemented on top of the Clio data exchange system developed in the Information Integration Group at IBM Almaden and is based on the Mapping Specification Language of Clio.

## Main features

- **Data-driven understanding of schema mappings based on routes**  
A route illustrates the exchange steps taken by some source data to arrive at some target data according to the schema mapping.
- **Display of one or all routes for selected source or target data**  
One route can be computed fast and alternative routes can be shown on demand. All routes are shown concisely, with common exchange steps factored out.
- **Guided routes computation**  
allows one to explore different routes by making choices at each step of the route, as well as undo previous decisions.
- **Standard debugging features**  
such as single-stepping the exchange process, breakpoints and 'watch' windows for variables
- **Schema-level routes exploration**  
allows one to understand the relationships between elements of a schema mapping.

*SPIDER screenshot: A – browsing source and target data; B – exploring multiple routes; C – watch window for bindings to source and target facts.*

The screenshot shows the SPIDER Demo application interface. The window is titled "SPIDER Demo" and has tabs for "Schema Mapping", "Instances", and "Routes". The "Instances" tab is active, showing "Source Instance" and "Target Instance".

The "Source Instance" section contains two tables:

ssn	name	location	cardNo	limit
234	Anna Brown	LA	223-456	2K
111	Jeff Smith	San Jose	777-789	15K

ssn	name	address	cardNo
234	Anna Brown	LA	777-789

The "Target Instance" section shows a tree view of data:

- Accounts: accNo: 223-456, limit: 2K
- Accounts: accNo: N1, limit: L1
- Accounts: accNo: 777-789, limit: 15K

The "Routes Exploration" section shows a diagram with three database icons and arrows labeled D1, D2, and C1.

The "Current Exchange Step" section has tabs for "Dependency", "Fact Bindings", and "Variable Bindings".

The "FOREACH bindings" table has columns: ssn, name, address, cardNo.

ssn	name	address	cardNo
234	Anna Brown	LA	777-789

The "EXISTS bindings" section shows a tree view of data:

- Fargo-Finance: Clients: ssn: 234, name: Anna Brown, address: LA, AccOwned: accNo: N1