# Graphical formalisms for mapping languages

- VML-G
- Forms-based mapper

Why do we need a graphical formalism?

- Easier to comprehend the mapping?
  - Diagrams can be read by non-experts
- Easier to check that everything is mapped?
  - All attributes for classes from both schemas
  - All combinations of invariants for the same classes
  - All classes in a schema?
- Faster to specify the mappings?
  - Support for mapping equation syntax
- Graphical mapping specification tool can provide validation support and schema management support
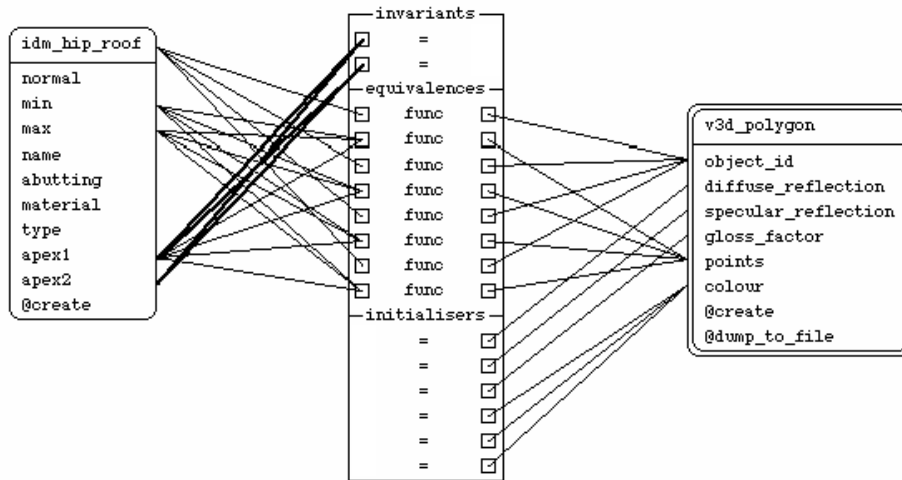
VML-G

- Provides visualisation of main components within a VML mapping specification
  - Classes
  - inter_class specification
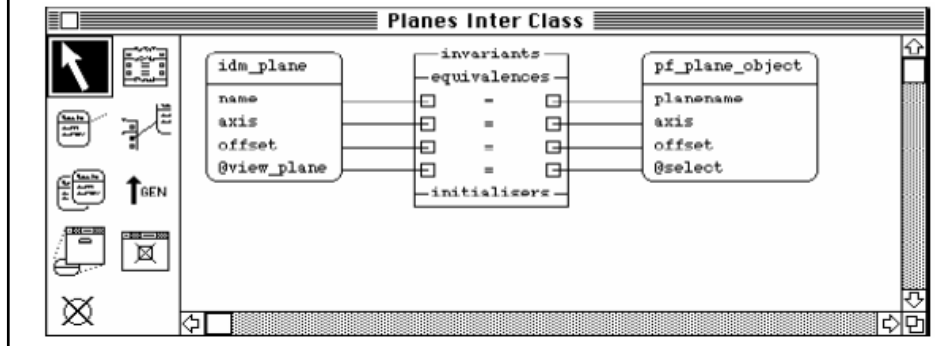
VML-G approach

- Icons for classes
  - View all attributes and methods (or subsets)
- Icon for an inter_class
  - Break up invariants, equivalences, initialisers
  - Equation type is denoted by a symbol
  - Full specification of each equation is viewed in a textbox
  - Full text of the inter_class specification can be viewed in a text window
- Wiring approach to join attributes and classes to equations in the inter_class

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VML-G example

Forms-based mapper

- VML and VML-G are aimed at analyst programmers
- In the real world a business analyst often knows the correspondences between information in different business systems
  - How to get this information out of them?
    - Business people deal with forms containing information
    - Provide a forms-based view of the two representations
    - Allow the business analyst to connect form components together to specify the mapping
    - This specification can be refined by programmers later

Forms-based mapper (XML)
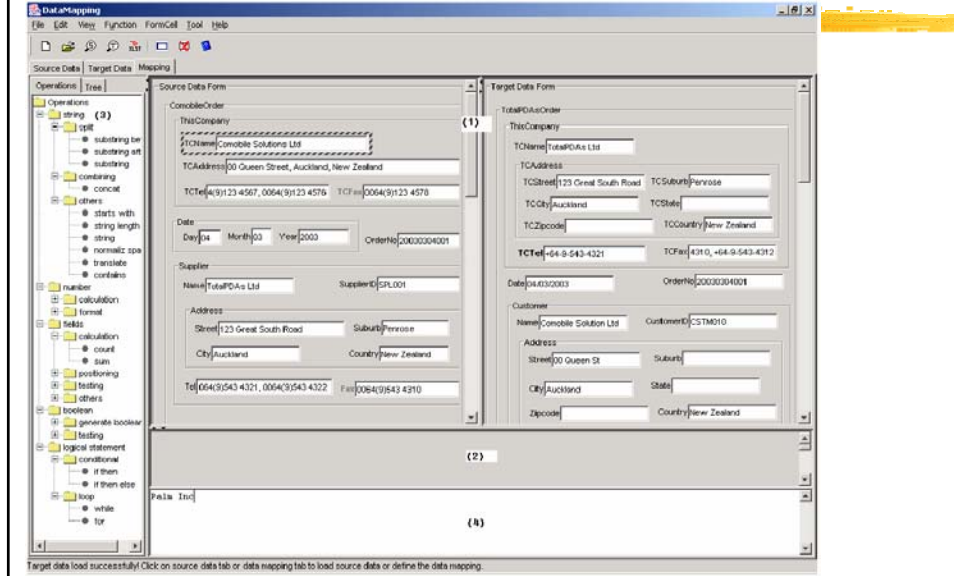
Drag and drop mapping

One-to-one mapping   One-to-many, function-based mapping

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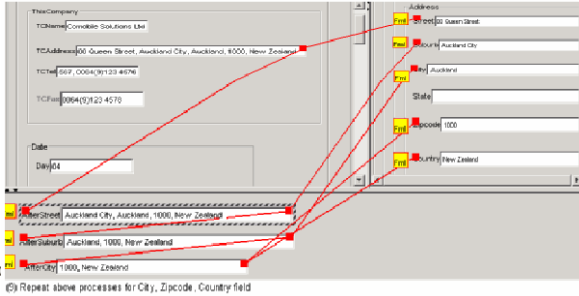
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Drag and drop mapping

(4) Formula shows on Date field on target field

Many-to-one attribute mapping

(5) Enter Return and get result:

Visualising temporary elements

(6) Repeat above processes for City, Zipcode, Country field

Graphical formalisms

- Adjunct to the textual mapping notation
  - Provide a more comprehensible view of a mapping
  - Enable greater checking of mapping specifications
  - Tailorable to specifier specific notations