Match Developer 2.0

Release Notes. Made available on January 2015.

What's New

Major	**Frames has been re-introduced for data modeling.**
New	**Freeze the stub, new keywords, list processing, and much more.**
Changes	**Redesigned menus, navigation and overall improved application stability.**
Fixed	**Many bugs have been fixed from previous MD versions.**

Match Developer 2.0

There have been many new features added to MD2, plus hundreds of fixes, changes and improvements since our last release. Many of which you will notice immediately in the improved UI. Others will become apparent while creating knowledge bases. In general, we think you will have a much greater knowledge modeling experience with the enhanced knowledge tables and the redesigned, re-introduced frame system for data modeling. Some of the new features available include; frozen stub, frames, frame graph viewer, list processing and new keywords for date/time and ANY. Technically, much of the code has been refactored to decrease crashes and improve error handling.

I. Changes to how things look

A. A new simplified main menu

1. Variable, logic model and mathematical expression menu items have been replaced with menu item *New*

2. Mathematical expressions is now *Formula(s)*

B. Specific menu item changes

1. Preferences has additional tabs and features

(1) General

(a) added Integrity Checker (IC) preference settings for warnings and identical occurrences

(2) Table layout

(a) more control of colors

(3) Frame layout

(a) new for frame preferences

(4) Tree and graph layout

(a) new for tree and graph line sizing

(5) Print

(a) new for setting default print options

2. File menu item

a) Small changes to Import tables mostly naming related

b) New sub menu items:

(1) Support added to handle new mkbx file format

(2) Support added to print frame graphs

3. Edit menu item

a) Added the name of last deleted element to Undo

b) Find function improvements

(1) Added find and replace

(2) Integrated results window into find

(3) Simplified filter options

4. Table menu item

a) Simplified sub menu items, only "view table tree" and "optimize"

b) All other table functions have moved to the *New* menu item

5. Frame menu item

        a) Changed to support new frame features

        b) New sub menu items:

            (1) To support importing of instances from external files i.e. csv, xml

            (2) Showing the frame graph

            (3) Create a frame from a table

6. New menu item

        a) This is a new menu item which consolidates the old menu items of variable, logic model and mathematical expressions

        b) This single menu item is also where all new tables, frames, aggregate frames, variables, logic models and formulas can be created from.

        c) Secondary actions such as creating frame instances, conditions, actions and alternatives have been moved here

7. Knowledge bases menu item

        a) Check integrity window has been adapted to support frames and messages to have been improved (more descriptive and clear)

        b) A toggle warning button has been added to the IC

        c) Minor additions to support frames in the statistics window

8. Window menu item

        a) Added the short cut key for how to close windows

9. Help menu item

        a) Added visual aid that points to the users search text within MD

        b) Full Help feature is not complete, expected in next release

C. Navigator

1. The short cut menu available in the upper half of the window has changed to support frames and collapsing/expanding of tree

2. The short cut menu available in the lower half of the window has changed to support changes to variables

3. The navigator also has a new look to accommodate the changes to variables

        a) Changed table headers, only Variable name, Type and Properties

        b) Properties column now includes Domain type, Goal, and Lost

D. Table properties, variable properties and sub windows

1. All windows have improved layout, spacing, labels and descriptions

E. Table editor

    1. Freeze the stub is a major UI change to the knowledge tables (when the number of alternatives in a table grows larger than the screen size, the stub will become fixed and all cells on the right side of the double line can be slid under the stub, allowing scrolling while still viewing the condition subjects).

II. Changes to how things work

A. Opening and saving an mkb(x)

   1. Open an mkb(x) by dragging the file into an open navigator window

   2. Save as… allows you to select an MD version (2.0, 1.x) or XML

      a) Default is always .mkbx (so beware when you need an older version)

   3. All images, audio, and video files are now packaged in the mkbx. You will no longer need to manage a separate resource folder. Resource files need 32 bit JVM for playing audio and video files.

B. Exporting an mkb(x)

   1. Export for Player… allows mpl(x) files to be created for Match Player 2.0 and 1.x

      a) However, the integrity checker (IC) has changed and will ask you to fix errors that were not caught with the IC in MD 1.x. Most errors can will be domain related and clicking "Build Domains…" will fix most IC errors.

C. Find and Replace

   1. The Find and Replace window now has the option to select the text that you want to replace and replace all instances or only selected instances of the text. The item (i.e. table) selected in the results list will be where the change occurs. Open the item by double clicking it in the list or select "Goto" to see the new text.

D. Working in the navigator

   1. Table, Frames, Formulas, and Logic Models field and context menu changes.

      a) Organizing tables in the table field has become easier with Alphabetical and hierarchical sorting.

      b) Expand all and collapse all has been added to the context menu.

      c) In support of the new Frames feature, you can use the *Create frame from table* option to build a new frame from the variables defined in a table.

   2. Identifying domain, goal and lost variables can be done by looking in the new Properties column. This is a comma separated list containing Lost (when applicable), Domain (i.e. Qualitative), Goal (when applicable).

E. Using the New menu item

   1. The New menu item is where all functions for creating/adding Tables (incl. adding conditions, alternatives, and actions), Frames (incl. aggregation frames and frame instances) , Variables, Formulas, and Logic models.

   2. The New menu is context sensitive and depending on what component is in focus on screen, the menu items will either be enabled or disabled. So be aware, for example, of which window is in focus or what table cell you are working in.

F. New features in the Knowledge Base sub menus

   1. In the improved Integrity Checker there have been multiple changes:

a) Messages are more clear and the component where the error lies is indicated separately.

b) A new feature called *Toggle warnings* allows you to turn off all the warnings so only the errors are visible and can managed easily.

c) Frame errors are handled on a separate screen. Click the *Frame Integrity* button to switch screens. Note that the number in parenthesis is a counter for the number of errors (same for Table Integrity).

d) Solving frame errors is done sequentially. There are rules that need to satisfied before you will see specific frame constraint errors (i.e. A primary key needs to be selected before you see errors about the instance values not meeting a constraint).

G. Table Properties

1. On the general tab of table properties, there is now the option to *Insert Frame* as an initialization frame. This allows you to insert all the frame variables at once. They will be grouped in the standard player and asked to the user at the same time.

H. Match Variables and Variable Properties

1. In MD2 there are two types of variables, which are defined on the general tab.

a) **Standard** variable includes the old system, goal, and init variables. Basically everything you write in the condition stub, action stub, and frame variable will be recognized as a standard variable (except keywords).

b) **Display** variables still function the same, but its properties are defined in the same dialogue window as the standard variable. It also allows you to create a message that the user will be forced to read (hopefully) and then select OK to move on. The message will be in a separate pop-up window instead of being shown in the old message window (standard player) or at the bottom of the web player.

2. Variable Domains

a) Gone are the old non-semantic qualitative variables with minimum length of zero. They have been replace by qualitative length variables with a minimum length of 1, which means that the user must always enter an answer. This change could mean modeling certain questions differently but the change is more in line with the AKS principles.

b) For qualitative length variables of <= 30 characters you will be able to set an input mask for each character specifying whether it should be; any character, letter, upper case, lower case, number, special character, or a specific character.

c) Link domain elements to domain instances. To accommodate frames, which also allow you to create instances of frame variables, its instances can be used as the domain elements of qualitative enumeration and quantitative enumeration variables. Linking works similar to retrieve domain except that once the variable is linked to frame instances, the domain will be automatically updated every time the frame instances change. This is especially useful with large domains which are constantly being updated and imported into frame instances.

d) Retrieving domain works the same as before but with support for retrieving a domain from frame instances (this is a one time retrieve, not the same as linking). Additionally, an option to remove the existing domain values during the process has been added. This saves a lot a manual effort when working with large domains.

3. Inference Methods

a) When a variable is multi-valued and frames have been created, it will be possible to use the frame inference method. With this method, questions will be answered with what ever values are listed in the frame variable instances. This method, in conjunction with the new HEAD|TAIL list processing feature will allow you to recursively process large amounts of data with simple knowledge tables.

I. Tree view

1. With the View as tree option for knowledge tables you can control more of the preferences for the components shown on screen, i.e. font, lines, borders, background, etc.

2. On creation of a sub-table link the new table now appears in the correct, logical order.

3. The double-clicking on a tree node behaviour has been modified. Double-clicking an end node opens the table. Double-clicking a node set to a module collapses or expands the tree. Right click will still show a context menu.

J. Formulas

1. The dialogue to create or update a formula is simpler and clearer. First arguments can be appended to the name, e.g. Function(X,Y). Then buttons "Insert argument" and "Insert Operator" can guide you to edit a correct mathematical expression (the body of the formula).

K. Deleting lost variables

1. In Match 1.1 all lost variables are deleted where deleted with one click. Now a list of lost variables will be shown. Initially all variables are highlighted, so you can delete them all, but selecting individual variables is also possible - highlight some variables (control-click or command-click) and click delete.

L. Printing

1. The print dialogue is now simpler and clearer. With buttons "Print whole KB" or "Preview whole KB" all KB items are printed or previewed, regardless of the selections.

2. Extra configuration options for printing can be found in the preferences > print tab.

M. Copy/Paste

1. Coping content from external sources, i.e. word docs, can now be pasted to all parts of a kb, including directly into table cells.

2. When copying table cells, only rectangular selections are copied to the clipboard and can be pasted to new cells. The selection of cells where content will be pasted needs to have the same number of condition row, alternatives will be added automatically but not conditions.

Tip: if you want to copy the whole table, use the duplicate table function.

III. Brand new things

A. Initialization variable indicator

   1. In the table editor a knowledge tables with initialization variables will be indicated with a heavy top border. You will clearly notice the difference in line thickness and this will save you time when searching for initialization variables.

B. Frames

   1. Frames are not a new concept for Match Developer. Earlier versions of MD offered frame functionality which allowed users to create a frame system where frame would act as a basic template for what a frame instance value could be, basically defining an object and its attributes. In turn, the frame instances could be be evaluated by your model.

   2. In MD2, frames are much more powerful and useful for modeling. It is now possible to create data models with constraints on or between any of the variables to specify the relationships. This gives you much more control over system design, business processes, information and data in general as frames and frame instances are directly usable and integrated with knowledge tables.

   3. Frames will only server to enhance the extraordinary testing and prototyping capabilities of MD.

C. Frame Graph Viewer

   1. An important new feature created to support working with frames is the frame graph viewer. Available from the main menu or a frame in the navigator, you will be able to visualize all your frames, their variables and constraints between frames. Complex models will become easy to understand and read as frames are designed with the same goal oriented principles as knowledge tables.

   2. Quickly navigate to a frame editor, constraint properties, or constraint tables directly from the frame graph viewer interface.

D. Importing Frame Instances

   1. Using external data for testing purposes or checking data quality has been made simple with an Importing Frame Instances from a File feature. Formats such as .csv and xml are currently supported.

   2. There is virtually no limit to the number of instances that can be imported into frames. You can set the default page limit in preferences and when working with the data, just page down or up to navigate the screens.

E. Freeze the Stub

   1. The stub of a knowledge table is the column of condition and action subjects (variables) together with the row numbers. The knowledge table editor is now designed with a permanently visible stub. When the table is wider than the editor, a bottom scrollbar appears with four buttons. They only manipulate the table at the right of the stub, so that the condition name and action name is always visible.

F. List recursion

1. To allow handling of lists in Match, Match Developer 2.0 has been extended with the list recursion feature. With list recursion it is possible to iterate through a pre-defined list of items, which can be a multi-valued variable. More advanced usage is to iterate through frame instances.

G. Using the new keywords

1. SHOW/SHOWVAR

a) These new keywords are identical in function and usage as DISPLAY AND DISPLAYVAR. In the future, DISPLAY AND DISPLAYVAR will be phased out.

2. ANY

a) ANY is used with multi-valued variables only. In the Match context, ANY effectively means "any number of additional values (including zero or none)". This effectively means that a condition alternative of Red AND ANY means that the alternative Red must be present, and whether or not any other alternatives exists is not taken into account. The result of this is that ANY causes an alternative to be extended to cover a larger subset of the domain.

b) You can also use a number of AND and OR keywords in combination with various alternatives to achieve the same effect as with the ANY keyword.

c) The MEMBER keyword provides a user the possibility to test the membership of a value in a set of values. This functionality is useful and necessary; however the ANY keyword will simplify, improve and extend much of the functionality previously offered by the MEMBER keyword.

3. Date/Time

a) There are date and time keywords available with the web player and its system variables, however they get the time and date as it was at the beginning of the consultation, meaning that for all but short consultations the values returned will become increasingly inaccurate.

b) The new keywords integrated in MD2:

(1) CURYEAR

(2) CURMONTH

(3) CURDAY

(4) CURWEEKDAY

(5) CURHOUR

(6) CURMINUTE

(7) CURSECOND

(8) TIMESTAMP

c) These date/time keywords can be used in action values only. Assign them to your standard variables and reuse the values as required.

4. (OF) HEAD, TAIL, []

    a) These three keywords have been added to support list recursion in MD2. They simply refer to the parts of a list:

        (1) HEAD always refers to the first element in a list

        (2) TAIL refers to any items that follow the HEAD element in a list

        (3) [ ] refers to a list with no elements

5. Changes to VALUE()

    a) You will notice that when you insert the keyword VALUE( ), you will first be shown a list of variables to choose from. Select a variable and Match will automatically insert the correct reference in the table with the proper syntax. This is not only a great time saver but will improve accuracy and consistency.

Please try all the new features,

and Enjoy!