

Blaise



Tips & Tricks



Overview

- Constants
 - Auxfield vs. Constant Examples
- Snippets
- Debugging the Rules
- Debugging Layout
 - Finding a field
 - Using Visual Cues
 - Browser Preview
 - Warning Icon
 - Validate
 - Sizing Issues
 - Layout Instructions



Constants



IBUC 2023
DURHAM, NC, USA

Constants

- Similar to constants in other programming languages
 - Cannot be reassigned, only referenced
- Define INTEGER, REAL, ARRAY, BOOLEAN, STRING
 - Choose to define whether a string is translatable
 - Double quotes: can define multiple languages in .blax/.bitt
 - Single quotes: cannot be translated (useful for enhanced text)
- Use constants in other type declarations
- Cleaner way of initializing variables
- Can also be used in Manipula



Constants

```
CONST
  Insanity = 'Repeating the same text.'
  Veto = FALSE
  SurveyDay = [ 'Monday', 'Wednesday', 'Friday' ]
  SomeDays = [ ENG "Monday" "Maandag", "Tuesday" "Dinsdag", ENG "Wednesday" NED "Woensdag" ]
  Root2 = 1.41421356
  OK = TRUE
  Zero = 0
  Spacing = '<NewLine count=3>'
  ASize = 10
  Code = 3
  Min = 1.25
  Max = 9.75
  txtHe = ENG "he" FRA "il"
```



Auxfield vs. Constant Examples



Constants

```
HowManyPeople
IF HowManyPeople = 1 THEN
  IF ACTIVELANGUAGE = EN THEN
    IntroText1 := '<newline>Hello ' + Name+ ' and welcome to the questionnaire.'
    IntroText2 := '<newline count=3>I would like to now ask you some questions about your living situation.'
  ELSE // ACTIVELANGUAGE = NL
    IntroText1 := '<newline>Hallo '+ Name+ ' en welkom bij de vragenlijst.'
    IntroText2 := '<newline count=3>Ik wil je nu vragen stellen over jouw woonsituatie.'
  ENDIF
ELSE
  IF ACTIVELANGUAGE = EN THEN
    IntroText1 := '<newline>Hello, welcome to the questionnaire.'
    IntroText2 := '<newline count=3>I would like to now ask each of you some questions about your living situations.'
  ELSE // ACTIVELANGUAGE = NL
    IntroText1 := '<newline>Hallo, welkom bij de vragenlijst.'
    IntroText2 := '<newline count=3>Ik wil jullie nu vragen stellen over jullie woonsituatie.'
  ENDIF
ENDIF
```



Constants

```
CONST
// These are translatable through a BITT file because of the double quotes
cIntroText1Single = EN "<newline>Hello $name and welcome to the questionnaire."
                   NL "<newline>Hallo $name en welkom bij de vragenlijst."
cIntroText2Single = EN "<newline count=3>I would like to now ask you some questions about your living situation."
                   NL "<newline count=3>Ik wil je nu vragen stellen over jouw woonsituatie."
cIntroText1Multi  = EN "<newline>Hello, welcome to the questionnaire."
                   NL "<newline>Hallo, welkom bij de vragenlijst."
cIntroText2Multi  = EN "<newline count=3>I would like to now ask each of you some questions about your living situations."
                   NL "<newline count=3>Ik wil jullie nu vragen stellen over jullie woonsituatie."

...

HowManyPeople
  IF HowManyPeople = 1 THEN
    IntroText1 := REPLACE(cIntroText1Single, '$name', Name)
    IntroText2 := cIntroText2Single
  ELSE
    IntroText1 := cIntroText1Multi
    IntroText2 := cIntroText2Multi
  ENDIF
```



Constants

```
AUXFIELDS
```

```
  HelpUrl : STRING
```

```
RULES
```

```
  HelpUrl := '<hyperlink uri=http://help.blaise.com target=_blank>Blaise Help</hyperlink>'
```

```
CONST
```

```
  // This is not translatable through a BITT because of the single quotes
```

```
  cHelpUrl = '<hyperlink uri=http://help.blaise.com target=_blank>Blaise Help</hyperlink>'
```



Constants

```
TYPE
  TRange = 1..10

LOCALS
  i : Trange

AUXFIELDS
  Max : INTEGER

FIELDS
  People : ARRAY[1..10] OF bPerson

RULES
  Max := 10
  HowMany
  IF HowMany = Max THEN
    MoreThanMax
    IF MoreThanMax = YES THEN
      MoreThanMaxInfoText
    ENDIF
  ENDIF
  FOR i := 1 TO HowMany DO
    People[i](i)
  ENDDO
```

```
CONST cMax = 10

TYPE
  TRange = 1..cMax

LOCALS
  i : TRange

FIELDS
  People : ARRAY[1..cMax] OF bPerson

RULES
  HowMany
  IF HowMany = cMax THEN
    MoreThanMax
    IF MoreThanMax = YES THEN
      MoreThanMaxInfoText
    ENDIF
  ENDIF
  FOR i := 1 TO HowMany DO
    People[i](i)
  ENDDO
```



Snippets



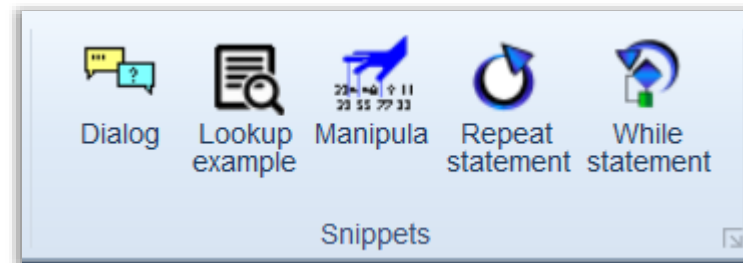
IBUC 2023
DURHAM, NC, USA

Snippets

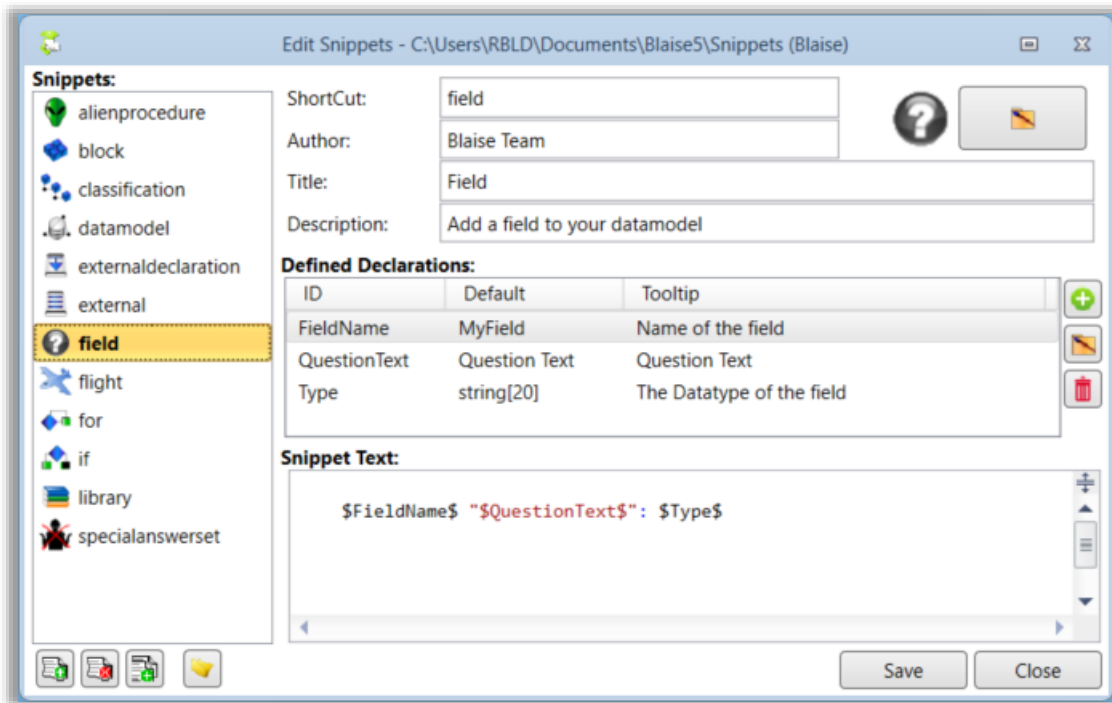
- Small, reusable pieces of code that can quickly be inserted
 - Separate snippets for Manipula and Data model projects
- Can be inserted through button click or a shortcut
- Useful if you need code directly in the sources instead of an Include file
- Can be shared throughout organization
- Improve programming speed



Snippets



Snippets



- ShortCut: use shortcut + TAB to insert the snippet
- Title: Text in the Control Centre Ribbon
 - Can optionally add a thumbnail
- Declarations
 - Parts of snippet that can be changed by user
 - Can be reused throughout snippet
 - Navigated via TAB



Snippets

```
DATAMODEL SnippetDatamodel  
  
PRIMARY ID  
  
FIELDS  
  
ID : INTEGER[4]  
field  
  
ENDMODEL
```

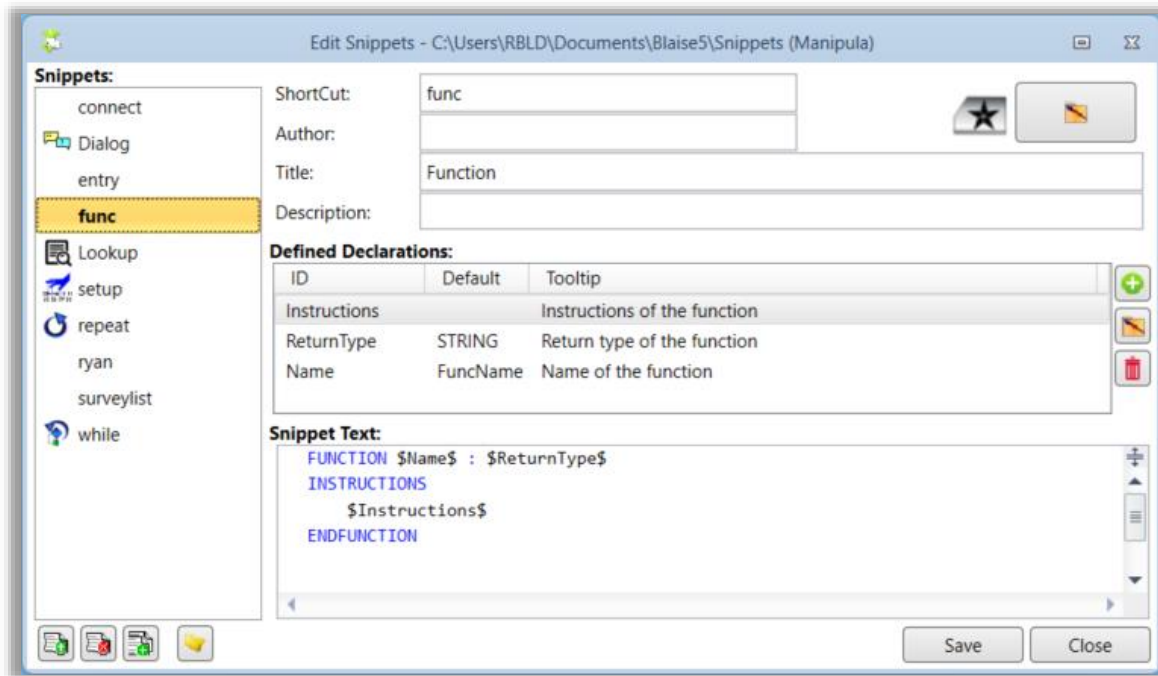


```
DATAMODEL SnippetDatamodel  
  
PRIMARY ID  
  
FIELDS  
  
ID : INTEGER[4]  
MyField "Question Text": string[20]  
  
ENDMODEL
```



Snippets

- Create your own!



```
FUNCTION FuncName : STRING
INSTRUCTIONS
    $Instructions$
ENDFUNCTION
```

- Tip: Use Backspace + ESC to exit snippet editing in the middle of the function



Debugging the Rules



Debugging the Rules

Session Viewer

- View current status of a session
- Refresh to view changes since last update
- View the values of Auxfields
- Opened via Control Centre, Server Manager or executable

Requirements

- Data model must have a primary key

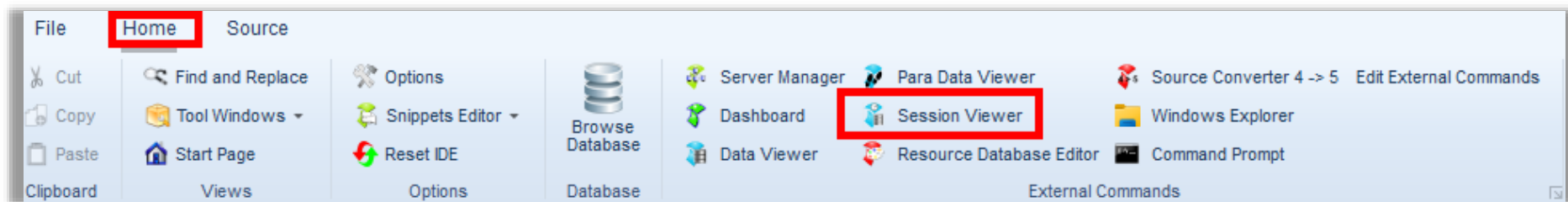
Tips & Tricks

- Data entry settings
 - Set Server Contact to on field switch
- Critical fields



Debugging the Rules

Control Centre



SessionViewer.exe

SessionViewer.exe	29-8-2023 05:00	Application	51.505 KB
-------------------	-----------------	-------------	-----------

Server Manager

The screenshot shows the 'Server Manager' interface with a 'Session Viewer' option highlighted with a red box. The interface includes a toolbar with 'Refresh', 'Install', 'Upgrade', 'Remove', 'Download CATI specification', 'Start', 'Deactivate', 'View', 'Alter', 'Reset', 'Scale Up', 'Session Viewer', 'Data Viewer', and 'Para Data Viewer'. Below the toolbar is a table with columns for Instrument, Status, Install Date, Cati Role, and W.

Instrument	Status	Install Date	Cati Role	W
Button	Active	18-9-2023 11:35		M
AuxfieldStrings	Active	18-9-2023 11:35		M
ConstNums	Active	18-9-2023 11:35		M
AuxfieldNums	Active	18-9-2023 11:35		M
ConstStrings	Active	18-9-2023 11:35		M
NonResponse	Active	18-9-2023 10:03	NonResponse	M
Computations in Sets	Active	15-9-2023 10:07		M
SessionViewer	Active	14-9-2023 15:35		M



Debugging the Rules

```
RULES
  Includes.KEEP
  Dob
  GeboorteDatum := TODATE(Dob.Dag, Dob.Maand, Dob.Jaar)
  gBeroep
  IF Beroep in [1, 3] {ASK Field} AND Includes.c = Yes {Included field} THEN
    IF GeboorteDatum.Age {Calculated Auxfield} < Includes.b {Included Field} AND Includes.a = RESPONSE {Included Field} THEN
      IF Includes.MoetVragen = YES {Included Auxfield} THEN
        ProgramLang
      ENDIF
    ENDIF
  ENDIF
```



Debugging the Rules

The screenshot shows the 'Session Viewer - SessionViewer' application window. The interface includes a menu bar with 'File' and 'Home', a settings panel on the left, a search bar, and a table of session data. The table has columns for Primary Key, Status, ID, and Last Modification. The 'Includes' section in the tree view is expanded, showing details for 'MoetVragen=Yes'.

Language :

Settings : StrictInterviewing

Parallel :

Active Field : Dob.Header

User Name : Anonymous

Data Entry State Search Commands

Primary Key	Status	ID	Last Modification
id1	Active	0e7e7282-bb4f-4587-98a8-163444cce1f3	18-9-2023 14:55:34
46546	Closed	05fec0a2-f441-46f9-83d1-668f19476200	14-9-2023 15:31:09

A Geboortedatum=1-1-0001
F ID='id1'
+ Includes
 A MoetVragen=Yes
 F a='abc'
 F b=50
 F c=Yes

1/2 Sessions for instrument SessionViewer loaded.



Debugging the Rules

Session Watch Window - id1

Left Panel (14:55:34)	Right Panel (14:57:14)
<ul style="list-style-type: none">A Geboortedatum=1-1-0001F ID='id1'Includes<ul style="list-style-type: none">A MoetVragen=YesF a='abc'F b=50F c=Yes	<ul style="list-style-type: none">A Geboortedatum=1-1-0001F ID='id1'Includes<ul style="list-style-type: none">A MoetVragen=YesF a='abc'F b=50F c=YesDob<ul style="list-style-type: none">Dob.Main<ul style="list-style-type: none">F Maand=9F Dag=18F Jaar=1993
<p>ActiveFieldName Dob.Header DataEntrySettingsName StrictInterviewing LanguageName ParallelName UserName <Anonymous> Status Active LastModification 18-9-2023 14:55:34 PrimaryKeyValue id1 ActiveMode FormStatus New ActiveParallelKind Main ValidationStatus Dirty</p>	<p>ActiveFieldName Beroep DataEntrySettingsName StrictInterviewing LanguageName ParallelName UserName <Anonymous> Status Active LastModification 18-9-2023 14:57:14 PrimaryKeyValue id1 ActiveMode FormStatus New ActiveParallelKind Main ValidationStatus Dirty</p>



Debugging the Rules

```
RULES
  Includes.KEEP
  Dob
  GeboorteDatum := TODATE(Dob.Dag, Dob.Maand, Dob.Jaar)
  gBeroep
  IF Beroep in [1, 3] {ASK Field} AND Includes.c = Yes {Included field} THEN
    IF GeboorteDatum.Age {Calculated Auxfield} < Includes.b {Included Field} AND Includes.a = RESPONSE {Included Field} THEN
      IF Includes.MoetVragen = YES {Included Auxfield} THEN
        ProgramLang
      ENDIF
    ENDIF
  ENDIF
```



Debugging Layout

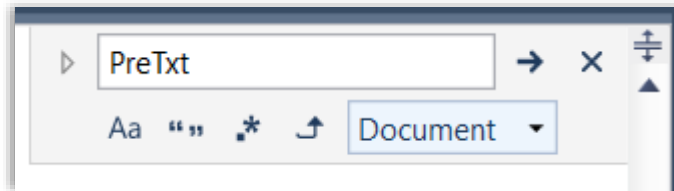


Finding a field

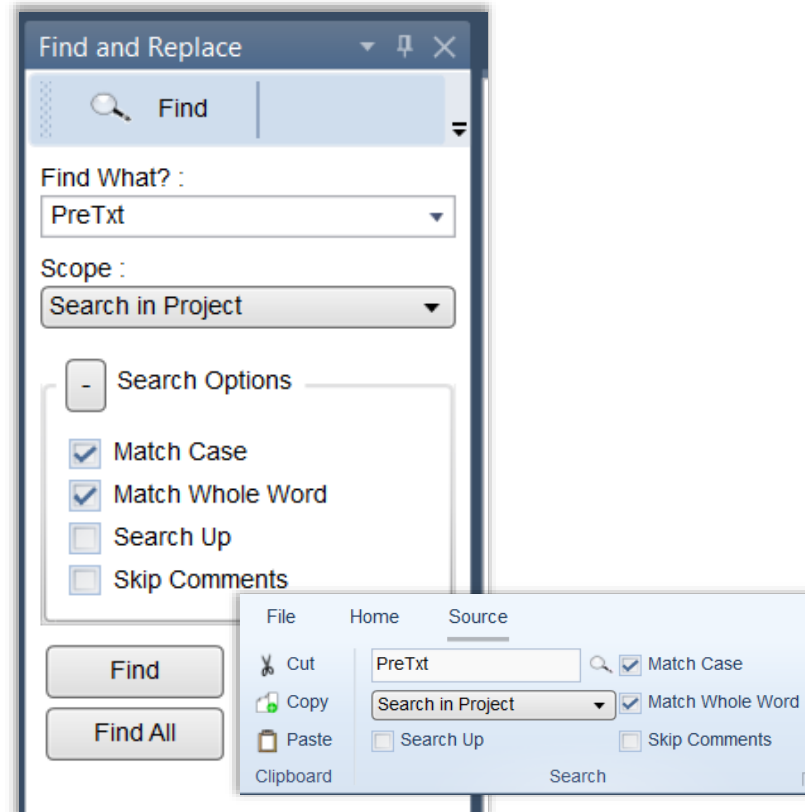


Find a field

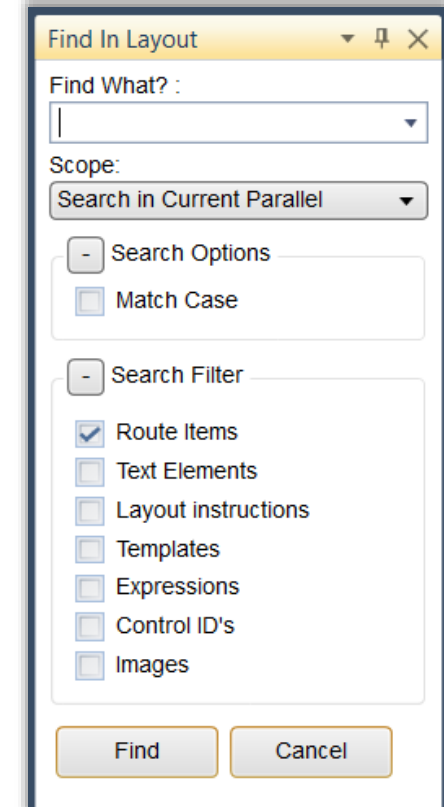
CTRL + F (Source View)



CTRL + SHIFT + F (Source View)

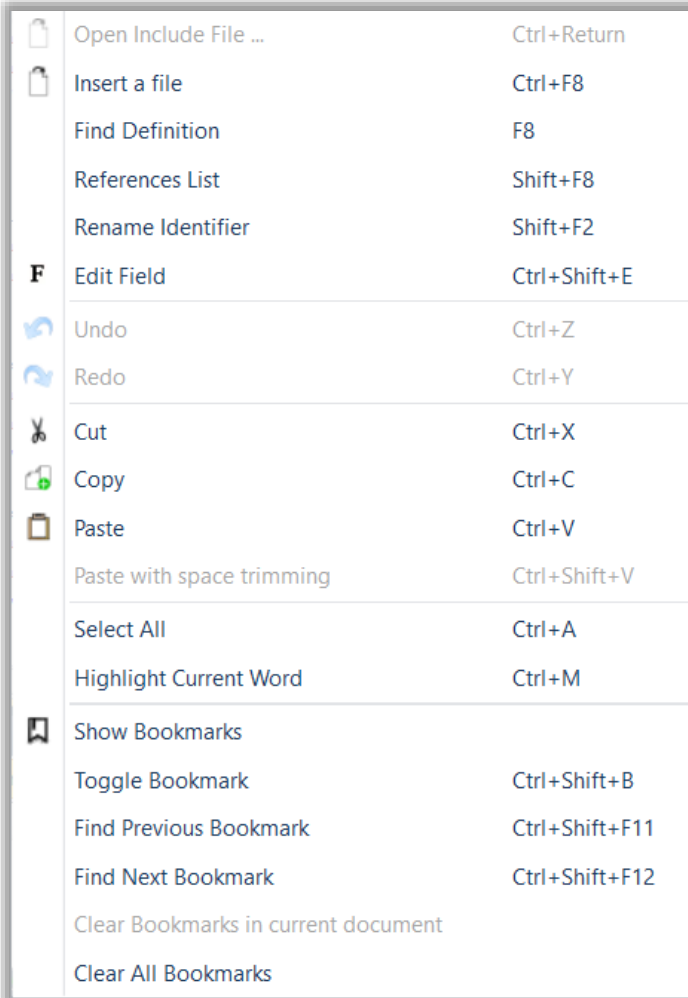










CTRL + F (Layout Designer)



Find a field definition

- CTRL + F7
 - Quickly jump from the focused field in the Layout Designer to the same field in the Source View or back
 - It jumps to the location where the field is asked or shown (in the rules)
- F8
 - Jumps to the definition of a field
- Right-click on an identifier to see all the options in its context menu



	Open Include File ...	Ctrl+Return
	Insert a file	Ctrl+F8
	Find Definition	F8
	References List	Shift+F8
	Rename Identifier	Shift+F2
F	Edit Field	Ctrl+Shift+E
	Undo	Ctrl+Z
	Redo	Ctrl+Y
	Cut	Ctrl+X
	Copy	Ctrl+C
	Paste	Ctrl+V
	Paste with space trimming	Ctrl+Shift+V
	Select All	Ctrl+A
	Highlight Current Word	Ctrl+M
	Show Bookmarks	
	Toggle Bookmark	Ctrl+Shift+B
	Find Previous Bookmark	Ctrl+Shift+F11
	Find Next Bookmark	Ctrl+Shift+F12
	Clear Bookmarks in current document	
	Clear All Bookmarks	

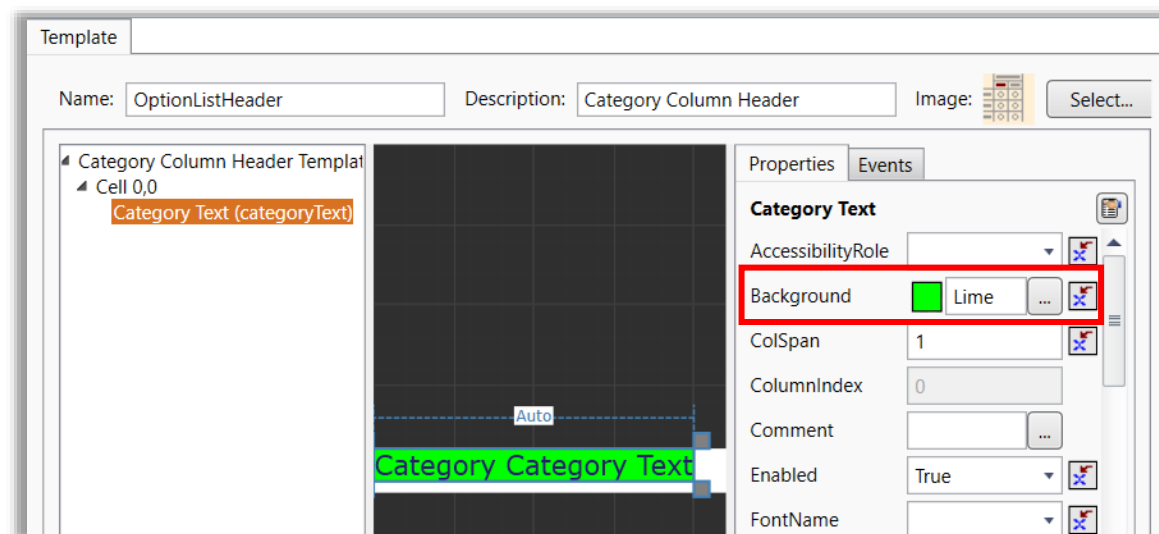


Using visual cues



Visual Cues

- Change a template visually
 - Add different colors to parts of templates
 - Change sizes
 - Add an extra element
- This will allow you to see if you're changing things in the template you were expecting
 - Are you maybe changing it in the wrong Resource Set?
- It will also show where each part of a template is presented, in relation to each other
 - This can help when trying to determine which cell needs a different size



Did you use one of the following substances, and if so, when for the last time?

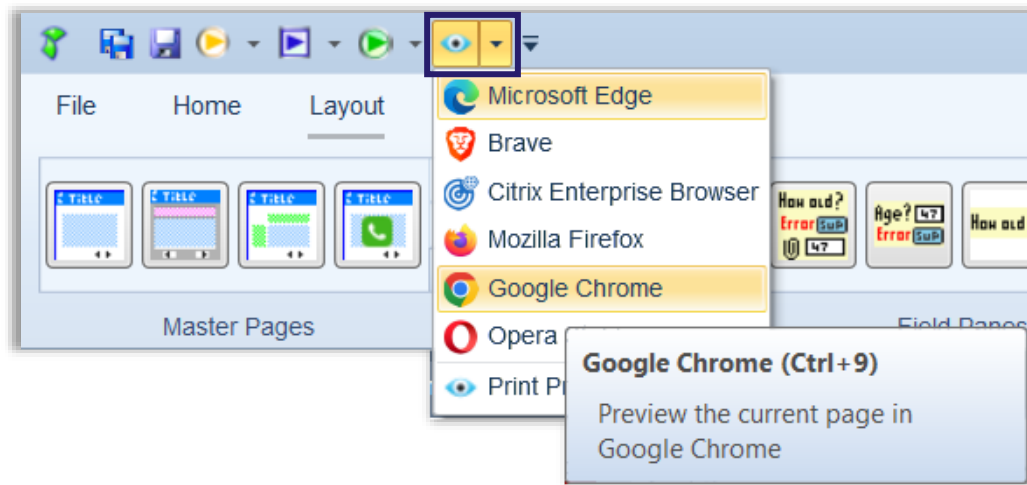
	Yes, in the last 30 days	Yes, in the last 12 months, but not in the last 30 days	Yes, more than 12 months ago	No, never used this	Don't know
Cannabis (hash, weed, marijuana)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amphetamine (like PEP and speed)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
XTC (ecstasy, MDMA)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Browser Preview



Browser Preview



- The Layout Designer shows a preview of the DEP
- To see a preview in the browser, click the dropdown next to the eye in the quick menu bar and select the browser
 - The current page will open in your selected browser
 - Only visual, NOT behavior
 - You can open the page in multiple browsers at the same time
 - check if everything looks alright in all browsers
 - Refresh the browser(s) (F5) to update the page after changing something in the Layout Designer to see the result of that change

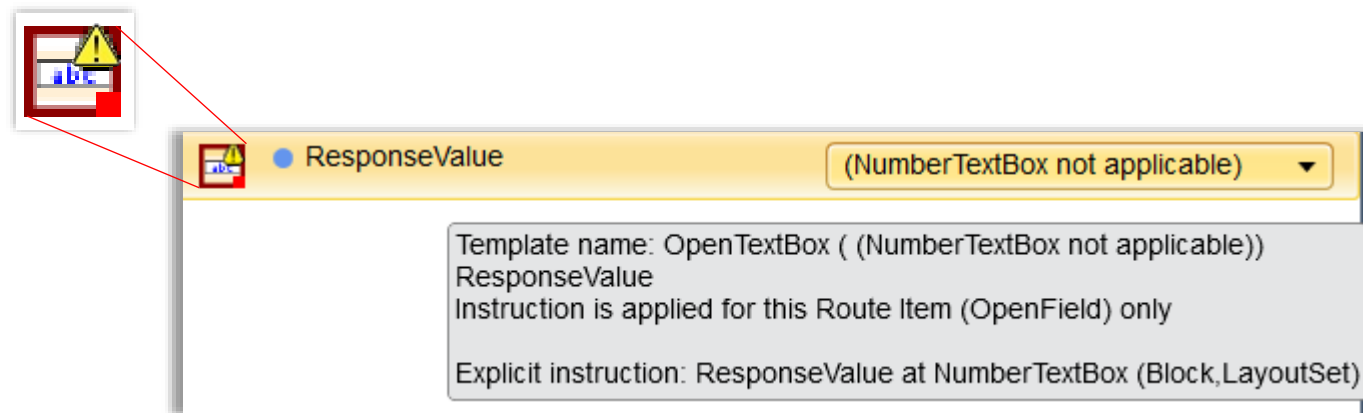


Warning Icon



Warning Icon

- Shows that a template is not applicable
 - Because the type is wrong
 - Or the template does not exist in the Resource Database
- Hovering over the icon will show a tooltip with details



Validate



Validating your data model

- Validation is important to make sure everything works as designed
 - Invalid sources won't compile/run
 - Invalid layout may cause unexpected behavior
- Validating consists of three steps:
 - Step 1: Validate your sources
 - Step 2: Validate your Resource Database
 - Step 3: Validate the layout
- If at any point something does not validate
 - Fix it
 - Start validating again from the level in which you fixed it (sources/Resource Database/Layout Designer)



Validate - Sources

- The first step is validating your sources
 - By default, this is done automatically by the parser
 - If you turned this option off, you need to compile the project manually (yellow arrow)
 - If you are unsure if something was updated after a change
 - Type a space somewhere
 - Compile manually (yellow arrow)
 - This will force the system to recreate your .bmix
 - Last resort: restart the services (if possible)
- The error window will show errors, warnings and information
 - Errors: need to be solved
 - Warnings: read them, consider if they will affect your questionnaire
 - Fix if they may affect your input/output values
 - It's ok to leave them if they do not apply to what you are using it for
 - Information: read and decide if you need to do something with it or not



Validate – Resource Database

- When your sources compile correctly, check your layout
 - Validate your Resource Database
 - Fix all errors
 - Preferably all, but the ones pertaining to templates you use at the very least
 - Fix all warnings
 - Preferably all, but the ones pertaining to templates you use at the very least
 - Why all?
 - Because you may decide to use one of the invalid templates at a later point or it may be automatically applied if you change your sources and invalid templates may cause unexpected behavior



Validate – Layout Designer

- If your sources compile and your Resource Database is valid, your layout may still show errors
 - Because the combination of templates you ended up using causes errors
 - Often these are Auto-Stretch errors
 - Sometimes these are Scrollbar-warnings



Validate – Layout Designer

- To fix:
 - click on the error message
 - It will jump to the template where it encountered the unwanted situation
 - Note that the error usually requires changing something in this template as well as in one or more parent templates (all the way up to the MasterPage template)
 - Use the Layout Designer | Layout instructions or the Template Explorer to see which templates are used
 - Jump to the template in the Resource Database from the Layout Designer
 - This will ensure you are changing things in the correct template
 - If you only need to fix something for one or 2 questions, it may be better to add a parameter to the template and change the value of that
 - This will ensure your other questions don't use that 'fix'
 - If you made changes in the Resource Database, revalidate that
 - If you made the changes in the Layout Designer only, revalidate the layout there

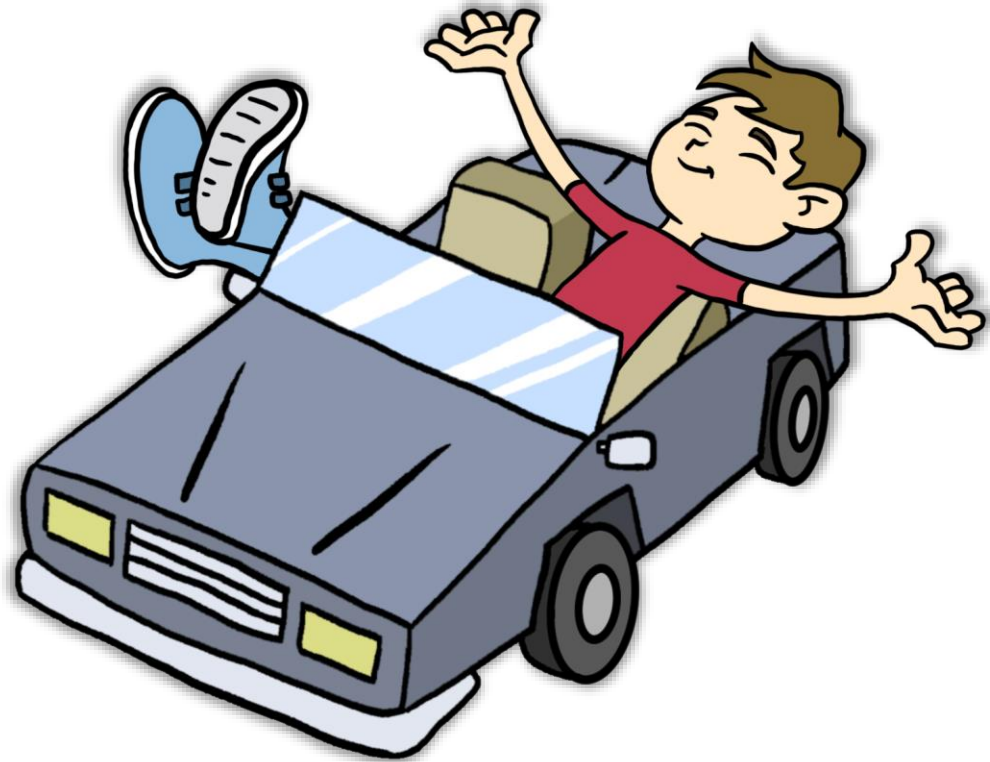


Sizing Issues



Sizing

“Do not stretch in an Auto”



Sizing-table

- `<child>` in `<parent>` = `<cell-value>`

		PARENT				
		Auto	Stretch/*	%	Undefined	Fixed size
	Auto	OK	OK, but if the child is larger than the available space, it will be cut off	OK, but if the child is larger than the available space, it will be cut off	OK	OK, but if the child is larger than the fixed size, it will be cut off
	Stretch/*	NOT OK	OK	NOT OK	OK, if the child directly replaces a placeholder. If not: NOT OK	OK
CHILD	%	NOT OK	NOT OK	OK	OK, if the child directly replaces a placeholder. If not: NOT OK	OK
	Undefined	OK if its direct child is Auto or fixed. NOT OK if its direct child is Stretch/*	OK, but if its direct child is Auto or fixed, and larger than the available space, it will be cut off	OK, but if its direct child is Auto or fixed, and larger than the available space, it will be cut off NOT OK if its direct child is Stretch/*	OK, but if its direct child is Auto or fixed, and larger than the available space, it will be cut off NOT OK if its direct child is Stretch/*	OK, but if its direct child is Auto or fixed, and larger than the available space, it will be cut off
	Fixed Size	OK	OK, but may be cut off if there is not enough available space	OK, but may be cut off if there is not enough available space	OK, but may be cut off if there is not enough available space	OK, but may be cut off if there is not enough available space



Child-Parent relationship examples

The DataValue template is child to the FieldPane template, but also parent to all the Category templates

Layout instructions

- FieldPane (parent) - Vertical
- DataValue (parent/child) - AnswerList
- Category (<All>) (child) - Enumeration
- Category (HlmMEens) (child) - Enumeration
- Category (MEens) (child) - Enumeration
- Category (NietNiet) (child) - Enumeration
- Category (MOneens) (child) - Enumeration
- Category (HlmMOneens) (child) - Enumeration

Name: Enumeration Description:

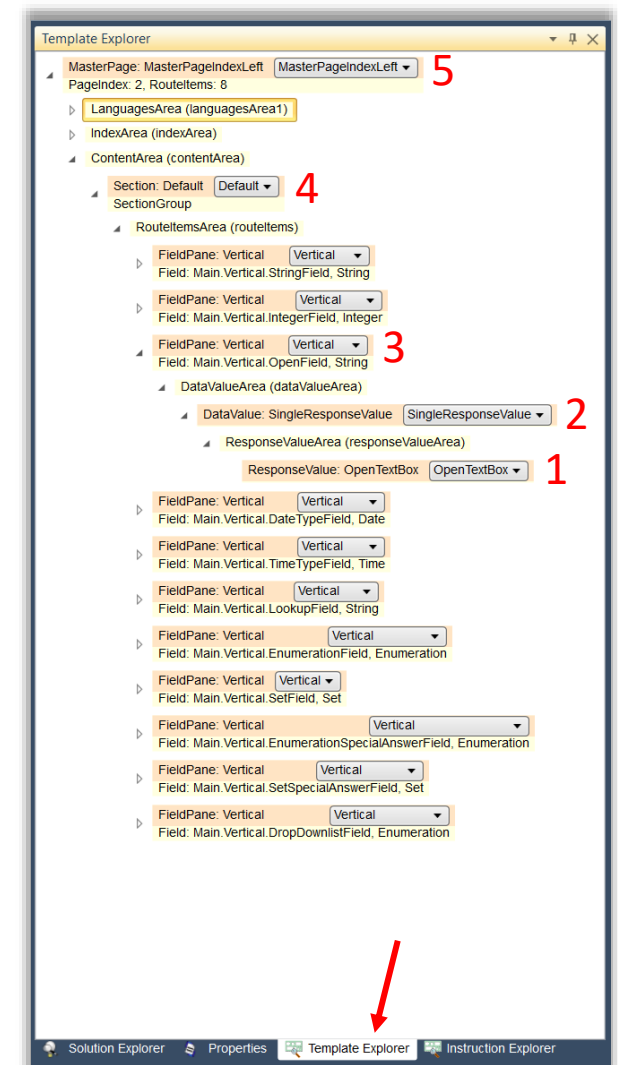
- Category Template
 - Cell 0,0 (parent) - Category Radiobutton (categoryRadioButton)
 - Panel (mainPanel) (parent) - Grid (mainGrid) (child)
 - Cell 0,0 (child) - Category Button (categoryText)
 - Cell 1,0

mainGrid is parent to Cell 0,0 but also child to mainPanel



Sizing – simplified rules

- Start from the bottom and work your way up through the template (and its parent templates)
- Check the *Template Explorer* to see which templates are used for this field
- If you want a text to wrap, it needs to be Stretch
 - This means that all its parents should be either Stretch, Star (*) or Fixed
- Note that once a fixed size is introduced, this ‘breaks’ a chain of Stretch/*
- its parent can be seen as the new bottom element to start from



Sizing - example

Widths

Template

Name: Vertical Description:

- Field Pane Template
 - Cell 0,0 *
 - Panel (mainPanel) Stretch Auto
 - Grid (mainGrid) Auto
 - Cell 0,0
 - Cell 1,0
 - Cell 0,1
 - Cell 1,1
 - Cell 0,2
 - Cell 1,2
 - Cell 0,3
 - Cell 1,3
 - Cell 0,4
 - Cell 1,4
 - Cell 0,5
 - Cell 1,5 Stretch
 - Panel (signalPanel) Stretch Stretch
 - Grid (signalGrid) Stretch Stretch
 - Cell 0,0 *
 - Error Text (signalText) Stretch
 - Cell 0,1 *
 - Suppress Button (suppressButton) 120

NOT OK

Template

Name: Vertical Description:

- Field Pane Template
 - Cell 0,0 *
 - Panel (mainPanel) Stretch Auto
 - Grid (mainGrid) Auto
 - Cell 0,0
 - Cell 1,0
 - Cell 0,1
 - Cell 1,1
 - Cell 0,2
 - Cell 1,2
 - Cell 0,3
 - Cell 1,3
 - Cell 0,4
 - Cell 1,4
 - Cell 0,5
 - Cell 1,5 500
 - Panel (signalPanel) Stretch Stretch
 - Grid (signalGrid) Stretch Stretch
 - Cell 0,0 *
 - Error Text (signalText) Stretch
 - Cell 0,1 *
 - Suppress Button (suppressButton) 120

OK



Sizing – simplified rules

- (Column)Widths are usually set to Stretch
 - so they can wrap where needed and use all available space
 - except maybe on the top level, depending on whether or not you always want your page to be the same width (use a fixed size in that case)
 - Make sure to have a background in case the screen is bigger
- (Row)Heights are usually set to Auto
 - except maybe on the top level, depending on whether or not you want your content area to 'float' or be stationary (use Star (*) in that case)
- Use fixed sizes for elements that need to stay the same size, regardless of the rest of the page
 - E.g. a header, a footer, or (navigation) buttons
- Use margins to space out things instead of an empty row or column
 - This will cut down on the number of elements and can improve performance as a result



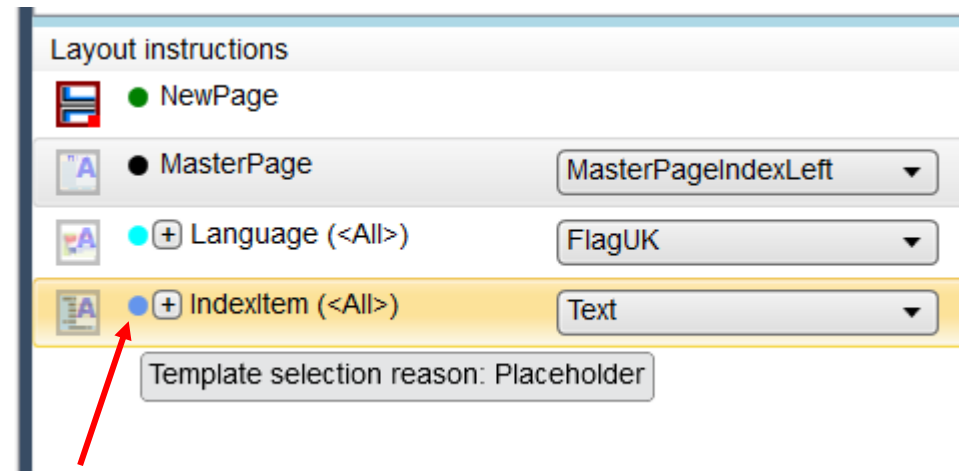
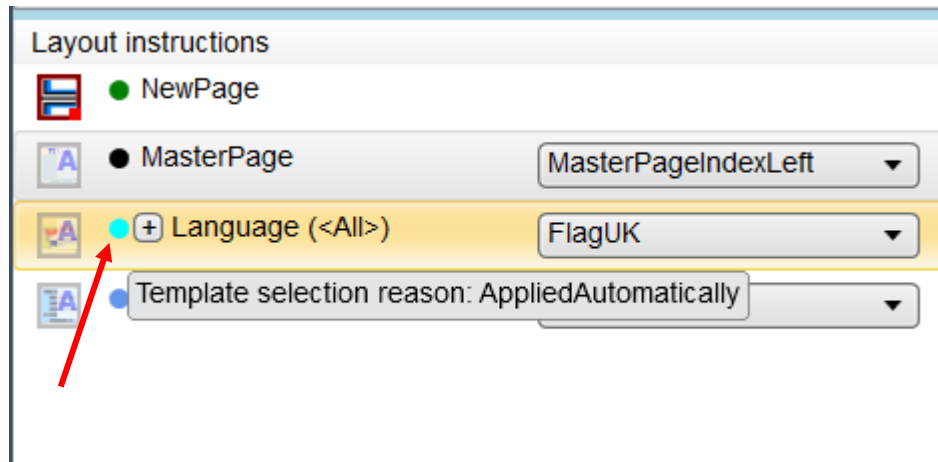
Layout Instructions

Why and where are they used



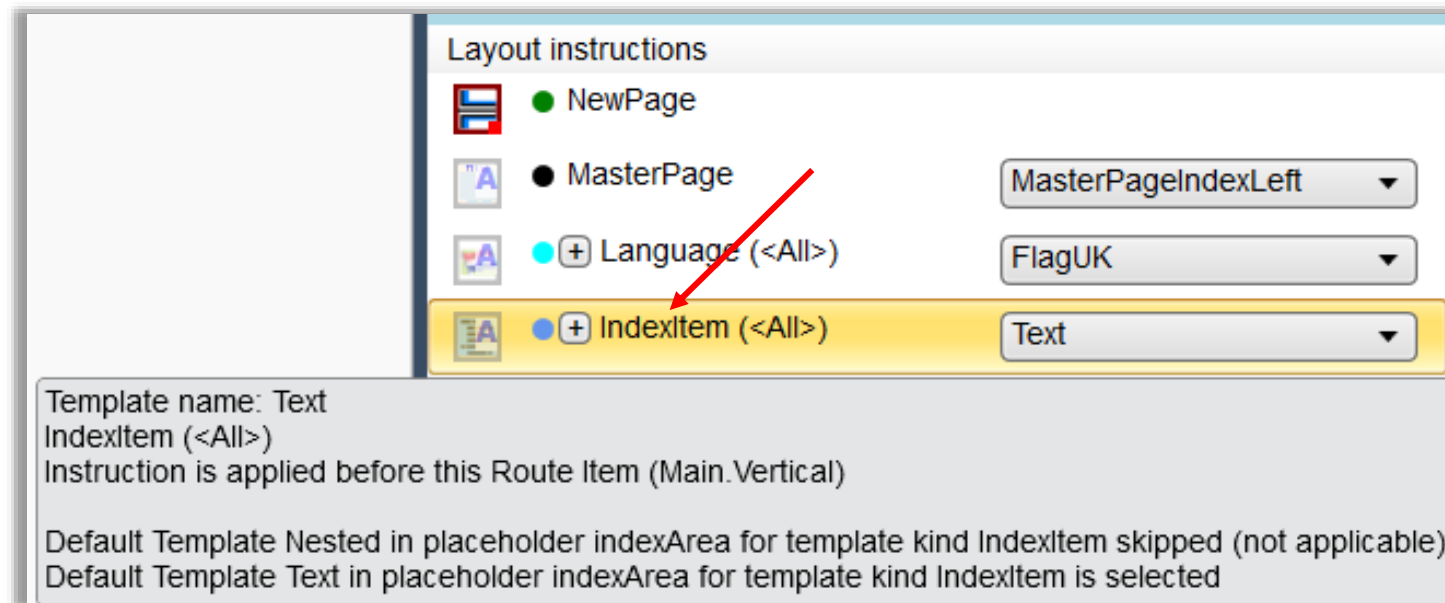
Layout Instructions – selection reason

- You can see why a template has been applied
 - By hovering over the colored dot in front of the template in the Layout instructions
 - Check this if you don't understand why a template has been applied







Layout Instructions – selection reason

- If you need more information, you can hover the template kind
 - This will show more detailed information
 - It also shows why another template was NOT applied



Layout instructions

	<input checked="" type="radio"/> NewPage	
	<input type="radio"/> MasterPage	MasterPageIndexLeft
	<input checked="" type="radio"/> Language (<All>)	FlagUK
	<input checked="" type="radio"/> IndexItem (<All>)	Text

Template name: Text
IndexItem (<All>)
Instruction is applied before this Route Item (Main.Vertical)

Default Template Nested in placeholder indexArea for template kind IndexItem skipped (not applicable)
Default Template Text in placeholder indexArea for template kind IndexItem is selected

Instruction Explorer

- Gives an overview of all applied layout instructions used in the current Layout Set
 - Blue = individual instructions
 - Red = Block or Type instructions
- Useful to quickly see where which instruction is used
 - Especially if it's automatically applied as they don't show up as icons
- A collection of all the information from all individual instruction icons (when hovered over) on the left-hand side in the Structure view
 - if you don't know exactly what you are looking for, hovering over individual instruction icons could take very long to check



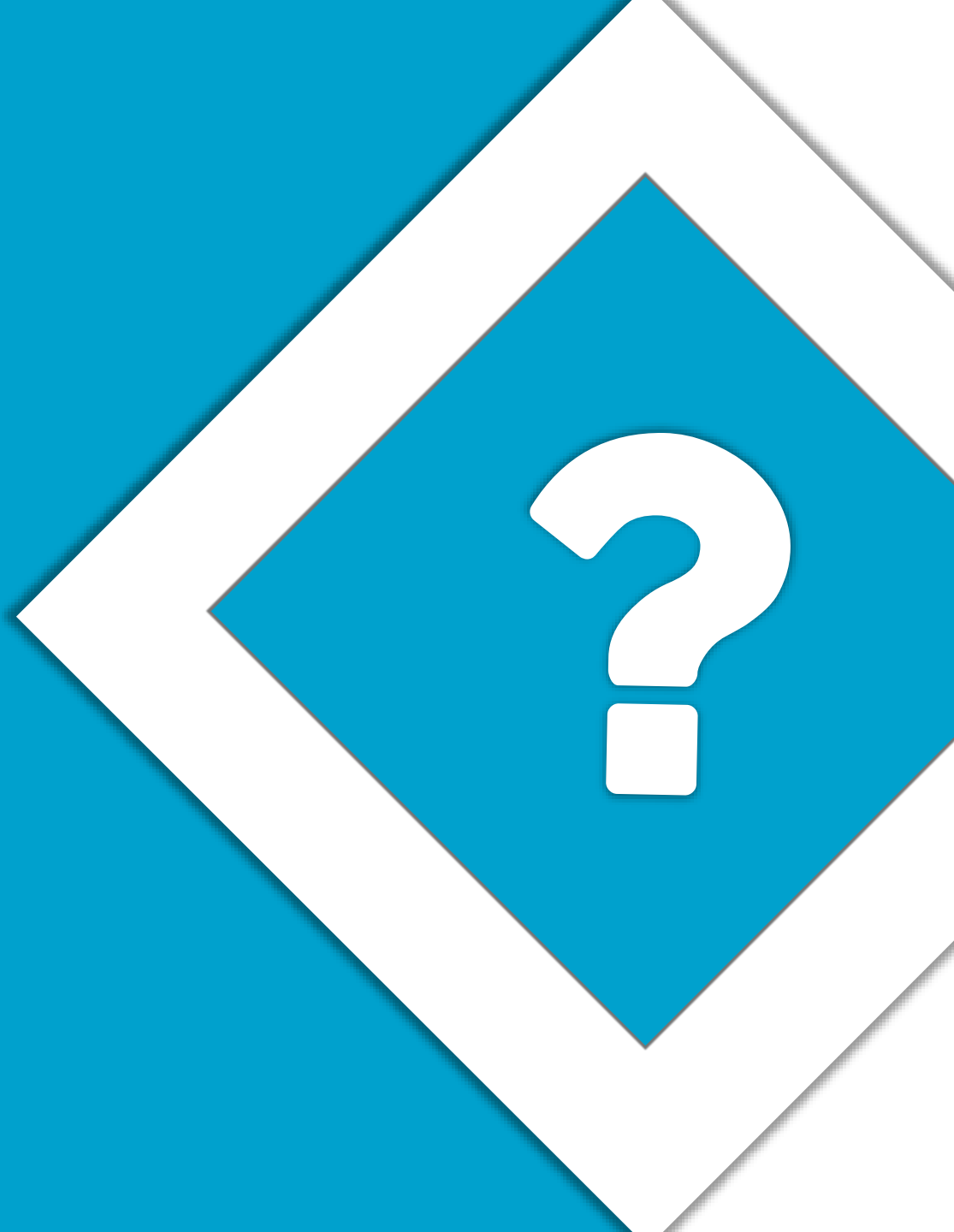
Instruction Explorer

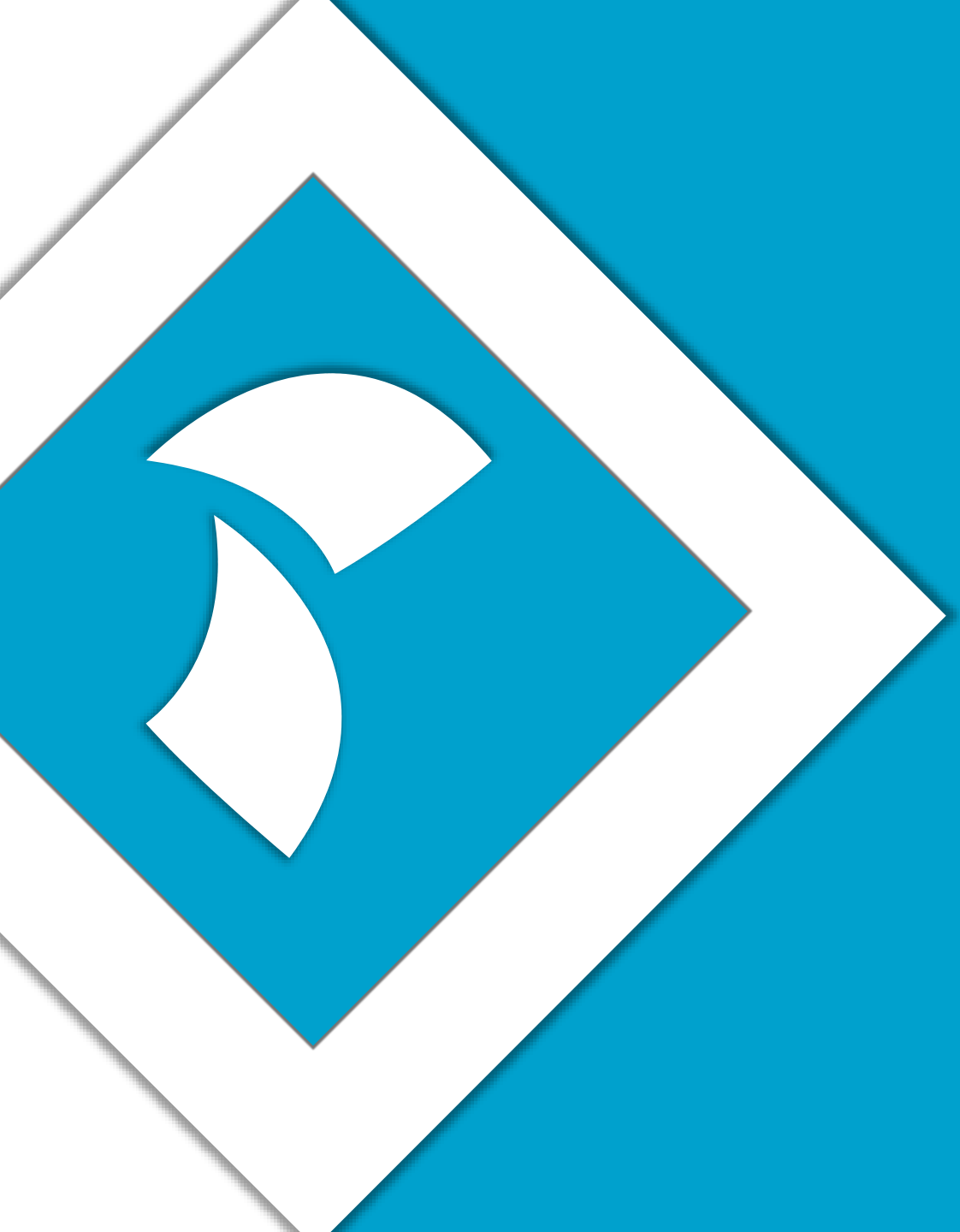
The screenshot displays the CVC - Blaise Control Centre software interface. The main window is titled "CVC - Blaise Control Centre" and shows a project named "CVC blax". The interface is divided into several panels:

- Top Panel:** Contains a menu bar (File, Home, Layout) and a toolbar with various icons for file operations, page management, and validation.
- Left Panel:** A tree view showing the project structure, including "Page 1", "Page 2", and "Page 3", with sub-items like "Main (Groupable)", "Intro (Section)", and "Vertical (Section)".
- Center Panel:** Displays a "StatNeth Question Catalog" with a list of questions and their corresponding UI forms. The questions include fields for string, integer, date, time, and lookup, as well as answer lists and multiple choice options.
- Right Panel:** The "Instruction Explorer" panel, which is highlighted with a red arrow. It shows a hierarchical tree of instructions, including "B_Main_B_Matrix_Row", "B_Main_B_TableMultiColumn bTableHeader", "Main", "Main TableMultiColumn TableMultiColumn_Vraag", "Main Other HuisnummerGrp", "Main OtherSpecify OSEF", "Main Matrix", and "B_Main".
- Bottom Panel:** An "Errors" panel showing "Layout Validation" and "Accessibility Validation" messages. It includes a table with columns for Type, Message, Control, Template, Applied To, Control Part, Child Template, and Child Applied To.

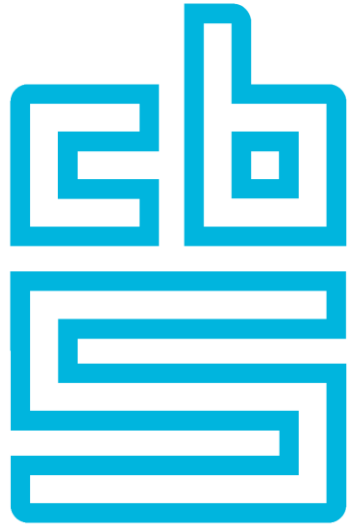
The bottom status bar shows the current page is "Page 2 of 8", the language is "ENG", and the version is "5.13.9.3463 (Developer)".







**Thank you
for your time**



Blaise

Gaining deeper understanding



www.blaise.com



blaise@cbs.nl



[@blaiseCBS](https://twitter.com/blaiseCBS)



[@Blaise5](https://www.youtube.com/@Blaise5)