

SurveyToGo

Enterprise

Expressions & Rules User Guide

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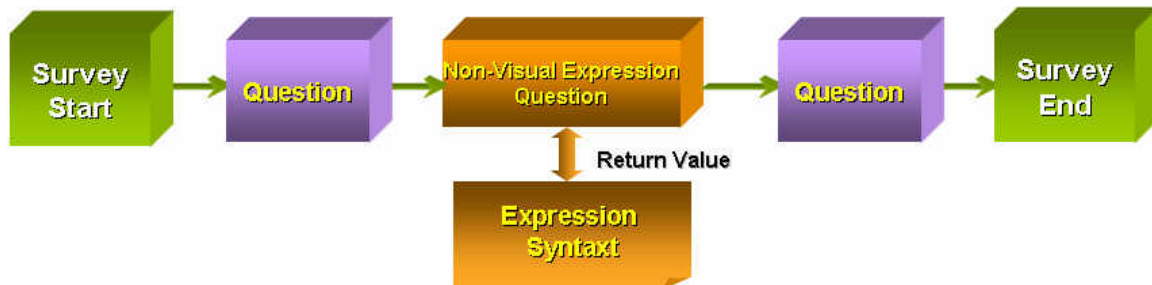
Chapter 1 – Overview

About Writing Expressions & Rules

SurveyToGo has been designed from the grounds up enable you to create powerful, robust surveys. One of the foundations for powerful & robust surveys is the ability to control the flow of the survey, and the data collected without imposing any limits. The most basic building block of the dynamic flow control and data collection mechanism of SurveyToGo are expressions and rules.

Expression Questions

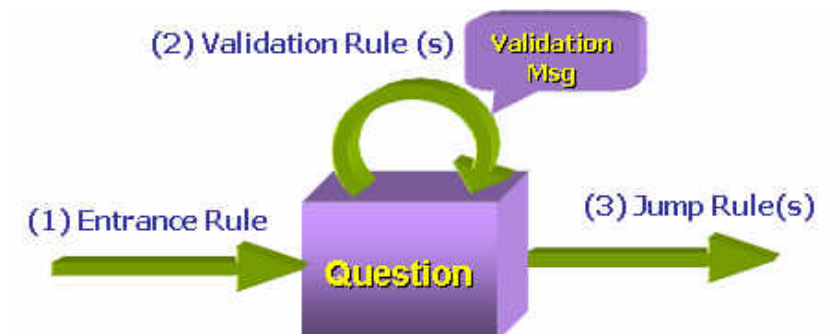
Expression questions are non-visual questions that when entered perform a specified expression, and return a value, as depicted in the following figure:



Example for an expression can be anything from a simple expression that knows how to add the answers of two previous questions and return the sum as the output of the expression, to a full-featured expression that can perform sql queries on a data-source. You can control the action the expression will perform by mastering the various functions that are supported by expressions.

Rules

Rules are composed out of expressions that when evaluate to true, control the flow of the survey. The SurveyToGo rules paradigm is depicted in the following figure:



Question rules are composed of 3 rule categories:

- **Entrance Rule** – Controls whether the question is displayed or not.
- **Validation Rules** – Controls whether the answer is valid or not.
- **Jump Rules** – Controls the action to perform in response to the question answer.

Expression Questions & Rules syntax

Both expression questions and rules contents are the same and are composed of one or more expressions. Expressions are written with the aid of pre-built functions that cover most of the most common requirements. However, when in need of additional capabilities not present in the pre-built functions, one can extend the functionality of the expressions by using C# compatible language.

Chapter 2 – Survey Constants

About Survey Constants

Survey constants are basically text replacements for values that are used over and over again in the survey. Let's consider the following example to better understand the need for survey constants:

Let's imagine a survey with 15 questions. We want to add an entrance rule to the first 10 questions, so that they will be shown only if the answer to the first question was less than 60. To do this, we simply add an entrance rule to each of the first 10 questions in the form of:

[condition] "Answer (1) < 60"

Quite simply right? now, let's imagine that we need to change the value to 55 instead of 60. What do we do? We go through the 10 first questions and update the entrance rules to:

[condition] "Answer (1) < 55"

Now let's imagine the value should be changed to 70... Hopefully you are now realizing the tedious work – changing 10 times the entrance rule – involved in this process. This is where constants come in handy. Using constants, we can define a constant named: "MyValue" and set it to be 60. Then code the entrance rules as:

[condition] "Answer (1) < MyValue"

This time, whenever the required value changes, you only need to change the value of the constant "MyValue". Because all entrance rules use that constant, nothing more needs to be done. That's 1 place to change instead of 10!

We have a survey with

You can add an unlimited amount of constants to a survey, for later usage in questions rules or expressions. An example of a survey constant can be the amount of points granted to a subject at the completion of the survey. Instead of specifying the actual amount of points in each expression or question rule, you can define a constant named POINTS that will hold the amount of points and then specify in expressions and question rules the constant POINTS instead of the actual value. This helps in maintaining the survey and avoids logical bugs if later on the amount of points is changed, you only need to change the value of the constant POINTS.

Chapter 3 – How to

About How To

This chapter is dedicated to the most common requirements and the corresponding rules & expressions that enable you to satisfy these requirements. You can use the following expressions and rules as building blocks for more complicated rules.

(1) Display Q2 only if the answer to Q1 is equal to 1

Survey Snippet

[Q1]: "Do you smoke?" [yes/no]

[Q2]: "How many cigarettes per day?" [numeric]

Requirement

Display Q2 only if subject answered 1 (yes) to Q1

Solution

Add the following entrance rule to Q2:

[condition] Answer (1) == 1

Explanation

The entrance rule checks the answer to Q1. If the answer is equal to "1" – the coding for 'yes' – the condition evaluates to TRUE, and the question will be shown.

(2) Display Q3 only if the sum of Q1 and Q2 is greater than 12

Survey Snippet

[Q1]: "How many dogs to you have?" [numeric]

[Q2]: "How many cats do you have?" [numeric]

[Q3]: "As an owner of more than 12 pets, do you live a healthy life?" [yes/no]

Requirement

Display Q3 only if the sum of Q1 and Q2 is greater than 12.

Solution

Add the following entrance rule to Q3:

[condition] Answer (1) + Answer (2) > 12

Explanation

The entrance rule checks the sum of the answer to Q1 and Q2. If the sum is greater than 12 the condition evaluates to TRUE, and the question will be shown.

(3) Branch from Q1 to Q2,Q3 or Q4 based on a specified answer

Survey Snippet

[Q1]: "Which beer do you like most?" [Corona, Amstel, Becks]

[Q2]: "You chose Corona!" [empty]

[Q3]: "You chose Amstel!" [empty]

[Q4]: "You chose Becks!" [empty]

Requirement

Branch from Q1 to the relevant question based on the answer to Q1.

Solution

Add the following jump rules to Q1:

[condition] Answer (CurrQues) == 1 [action] Go to Q2

[condition] Answer (CurrQues) == 2 [action] Go to Q2

[condition] Answer (CurrQues) == 3 [action] Go to Q2

Explanation

Each jump rule is checked. The one that evaluates to TRUE will be the one applied and its action will be carried out.

(4) Validate that answer to Q2 is not higher than answer to Q1. Otherwise, display an error message.

Survey Snippet

[Q1]: "What are your overall expenses?" [numeric]

[Q2]: "How much of that did you spend on beer?" [numeric]

Requirement

Answer to Q2 should not be higher than the answer to Q1 since the amount spent on beer cannot be higher than the total expense. If it is, show an error message.

Solution

Add the following validation rules to Q2:

[condition] Answer (CurrQues) > Answer (1) [message] "Beer expense cannot be higher than overall!"

Explanation

The Q2 validation rule checks the input of Q2 before continuing to Q3. The condition checks if the answer to Q2 is higher than the answer to Q1. If the condition evaluates to TRUE, the specified message is shown to the user.

Chapter 4 – Built-In Functions

About Built-In Functions

SurveyToGo includes many built-in functions to help you accomplish as many tasks as possible with easy.

Built-In Functions List

Question types: T/F – True False, N – Numeric, A – Any, D – Date, S - Text

Function	Description	T	Parameters	Example
Questions				
<code>Equals(QuesIdx, Value)</code>	The answer to question <code>QuesIdx</code> is <code>Value</code>	T/F	<code>QuesIdx</code> – Index of question <code>Value</code> – The value to check	<code>Equals (5,4)</code> Checks if the answer to question 5 was 4. <code>Equals (5, "good")</code> Checks if the answer to question 5 was "good".
<code>Answered(QuesIdx)</code>	Question <code>QuesIdx</code> was answered and not skipped.	T/F	<code>QuesIdx</code> – Index of the question.	<code>Answered(5)</code> Question 5 has an answer.
<code>NotAnswered(QuesIdx)</code>	There is no answer for <code>QuesIdx</code> .	T/F	<code>QuesIdx</code> – Index of the question.	<code>NotAnswered(QuesIdx)</code> Question 5 has no answer.
<code>Contains(QuesIdx, Value)</code>	Answer to question <code>QuesIdx</code> contains the value <code>Value</code> . This function can be applied to either FreeText, MultiTopics, Matrix or MultiSelect questions.	T/F	<code>QuesIdx</code> – Index of question <code>Value</code> – The value to check	<code>Contains(5, "good")</code> Answer to question 5 contains the word "good". <code>Contains(5, 3)</code> MultiTopics/ Matrix: The 3 rd option was selected in at least one topic. MultiSelect: The 3 rd option was selected among others.
<code>NotContains(QuesIdx, Value)</code>	The exact opposite of the <code>Contains</code> function	T/F	See the <code>Contains</code> function	See the <code>Contains</code> function
<code>NumOfChoices(QuesIdx)</code>	The number of choices chosen in <code>QuesIdx</code> . Applies to MultiSelect questions.	N	<code>QuesIdx</code> – Index of question.	<code>NumOfChoices(5) > 2</code> The number of selected options in the MultiSelect question 5, is bigger than 2.
<code>AnswerChoice(QuesIdx, ChoiceIdx)</code>	The answer index to the topic <code>ChoiceIdx</code> in question <code>QuesIdx</code> . Applies to MultiTopic questions.	N/S	<code>QuesIdx</code> – Index of question. <code>ChoiceIdx</code> – Topic index.	<code>AnswerChoice(5, 3) == 7</code> The answer index to topic 3 of question 5 was 7.
<code>ContainsSpecificRate(QuesIdx, Value, TopicIdx)</code>	The answer index to the topic <code>TopicIdx</code> is <code>Value</code> . Applies to MultiTopic or	T/F	<code>QuesIdx</code> – Index of question. <code>Value</code> – Value to check. <code>TopicIdx</code> – Index of	<code>ContainsSpecificRate(5, 7, 3)</code> The answer index to topic 3 of question 5 was 7

	Rating questions.		the topic.	
<code>NotContainsSpecificRate(QuesIdx, Value, TopicIdx)</code>	The exact opposite of <code>NotContainsSpecificRate</code>	T/F	See the <code>NotContainsSpecificRate</code> function.	See the <code>NotContainsSpecificRate</code> function.
<code>Answer(QuesIdx)</code>	Returns the value of the answer to question <code>QuesIdx</code> . Applies to FreeText, Numeric, DateTime and MultiChoice questions.	A	<code>QuesIdx</code> - Index of the question.	<code>Answer(5) == "good"</code> Answer to question 5 is "good". <code>Answer(5) == 3</code> MultiChoice: Index of answer to question 5 is 3. Numeric: Answer to question 5 is 3. <code>Answer(5) > 3</code> MultiChoice: Index of answer to question 5 is greater than 3. Numeric: Answer to question 5 is greater than 3.
<code>AnswerText(QuesIdx, AnswerIdx)</code>	The text label of the answer index <code>AnswerIdx</code> of question <code>QuesIdx</code> . Applies to MultiChoice or MultiTopic questions.	S	<code>QuesIdx</code> - Index of the question. <code>AnswerIdx</code> - Index of the answer/topic.	<code>AnswerText(5, 3)</code> MultiChoice: The text of the 3 rd option in question 5. MultiTopics: The text of the 3 rd topic in question 5.
<code>CurrQues</code>	Returns the index of the current question. Useful for writing cleaner expressions that refer to the current question, instead of using the actual question index.	N		<code>Answer(CurrQues)</code> Returns the answer to the current question. Refer to the <code>Answer</code> function for more info.

Subject

<code>SubjectProp(PropName)</code>	Returns the subject property with the name of <code>PropName</code> .	A	<code>PropName</code> - Name of the subject property.	<code>SubjectProp("Gender") == "Male"</code> The value of the subject property named "Gender" equals to "Male". <code>SubjectProp("Age") >= "Male"</code> The value of the subject property named "Age" is greater or equal to 18.
<code>ExternParam(ParamName)</code>	Returns the value of the external parameter <code>ParamName</code> .	A	<code>ParamName</code> - The external parameter.	<code>ExternParam("Age") < 18</code> The value external parameter "Age" is less than 18.

Utility

<code>Date (Date)</code>	Returns a date type value of the supplied Date . Mostly used when comparing values of functions that return dates.	D	Date – The date you want to represent.	<pre>Answer (5) > Date ("5/5/2005")</pre> <p>The answer to the date question 5, is a date that is greater then 5/5/2005.</p>
<code>Today</code>	Returns the date of today.	D		<pre>Answer (5) > Date (Today)</pre> <p>The answer to the date question 5, is a date that is greater then the date of today.</p>
<code>Now</code>	Returns the current time.	D		<pre>Now > Date ("22:04")</pre> <p>The current time is greater then 22:04.</p>
<code>IsPlatform (Platform)</code>	Returns whether the current platform running the survey is Platform . Mostly used to run certain questions only on certain platforms for surveys that are being run on multiple platforms.	T/F	Platform – The platform to check. Can be any of the following: ePlatform.Web ePlatform.PC ePlatform.PDA ePlatform.Mobile ePlatform.All	<pre>IsPlatform (ePlatform .PDA)</pre> <p>Returns whether the current platform running the survey is the PDA.</p>

Visual

<code>SetText (QuesIdx, Value)</code>	Sets the text of the question QuesIdx . Applies to all questions.		QuesIdx – Index of the question. Value – The text to set as the question text.	<pre>SetText (5, "What is your name?")</pre> <p>Sets the text of question 5 to be "What is your name".</p>
<code>SetTextFormat (QuesIdx, Value1[, Value2, Value3, ...])</code>	Set the text of the placeholders inside the question text. The list of values should match corresponding {0}, {1}, {2}... elements inside the question text. Applies to all questions.		QuesIdx – Index of the question. Value1 – The text to set instead of the "{0}" found in the question. Value2 – The text to set instead of the "{1}" found in the question. Value3 – The text to set instead of the "{2}" found in the question.	<pre>SetTextFormat (5, "John", "Smith")</pre> <p>If the text of question 5 was "Hello {0} {1}" then the text of question 5 will become: "Hello John Smith".</p>
<code>SetAnswer (QuesIdx, Value)</code>	Sets the answer of a text question to be Value . Applies to FreeText questions. Can be used to set the default answer to the question.		QuesIdx – Index of the question. Value – The text to set as the answer text.	<pre>SetAnswer (5, "ABC")</pre> <p>Sets the answer to question 5 to be "ABC".</p>
<code>SetAnswer (QuesIdx, Value1[, Value2, Value3, ...])</code>	Sets the answer(s) of MultiChoice, Numeric, MultiSelect or MultiTopic		QuesIdx – Index of the question. Value1 – The option to set. Value2 – The option	<pre>SetAnswer (5, 3)</pre> <p>Numeric: Sets the answer to question 5 to be 3. MultiChoice: Sets the</p>

	questions.	to set. Value3 – The option to set.	3 rd option in question 5. MultiSelect: Selects the 3 rd option in question 5. SetAnswer(5,3,7,8) MultiSelect: Selects the 3 rd , 7 th and 8 th option in question 5. MultiTopics: Sets the 3 rd option of topic 1, the 7 th option of topic 2 and the 8 th option in topic 3.
<code>TopBanner.Text = Value</code>	Sets the text of the top banner in the survey	Value – Text to be set as the top banner text.	<code>TopBanner.Text = "Satisfaction Survey"</code> Sets the text of the top banner to "Satisfaction Survey".
<code>TopBanner.Color = Value</code>	Sets the color of the top banner in the survey	Value – The color of the top banner. Can be one of the colors mentioned in Appendix A – Colors.	<code>TopBanner.Color = Color.Blue</code> Sets the color of the top banner text to blue.
<code>TopBanner.BackColor = Value</code>	Sets the background color of the top banner in the survey	Value – The background color of the top banner. Can be one of the colors mentioned in Appendix A – Colors.	<code>TopBanner.BackColor = Color.White</code> Sets the background color of the top banner text to White.
<code>TopBanner.FontName = Value</code>	Sets the font of the text of the top banner in the survey	Value – Font name to use.	<code>TopBanner.FontName = "Tahoma"</code> Sets the font of the top banner to be "Tahoma".
<code>TopBanner.FontSize = Value</code>	Sets the font size of the top banner text in the survey	Value – The actual size of the font.	<code>TopBanner.FontSize = 8</code> Sets the font size to 8.
<code>TopBanner.FontStyle = Value</code>	Sets the font style of the top banner.	Value – Style to use. Can be one of the following: FontStyle.Bold FontStyle.Italic FontStyle.Regular FontStyle.Strikeout FontStyle.Underline	<code>TopBanner.FontStyle = FontStyle.Bold</code> Sets the font style of the top banner to bold.
<code>TopBanner.Visible = Value</code>	Controls whether the top banner is visible or not.	Value – Set to either True or False.	<code>TopBanner.Visible = True</code> Makes the top banner visible.

Appendix A – Colors

Available colors

Whenever you specify a color in SurveyToGo, like in the TopBanner functions, you can use any of the following colors:

Color		
Color.AliceBlue	Color.Gold	Color.NavajoWhite
Color.AntiqueWhite	Color.Goldenrod	Color.Navy
Color.Aqua	Color.Gray	Color.OldLace
Color.Aquamarine	Color.Green	Color.Olive
Color.Azure	Color.GreenYellow	Color.OliveDrab
Color.Beige	Color.Honeydew	Color.Orange
Color.Bisque	Color.HotPink	Color.OrangeRed
Color.Black	Color.IndianRed	Color.Orchid
Color.BlanchedAlmond	Color.Indigo	Color.PaleGoldenrod
Color.Blue	Color.IsEmpty	Color.PaleGreen
Color.BlueViolet	Color.IsKnownColor	Color.PaleTurquoise
Color.Brown	Color.IsSystemColor	Color.PaleVioletRed
Color.BurlyWood	Color.Ivory	Color.PapayaWhip
Color.CadetBlue	Color.Khaki	Color.PeachPuff
Color.Chartreuse	Color.Lavender	Color.Peru
Color.Chocolate	Color.LavenderBlush	Color.Pink
Color.Coral	Color.LawnGreen	Color.Plum
Color.CornflowerBlue	Color.LemonChiffon	Color.PowderBlue
Color.Cornsilk	Color.LightBlue	Color.Purple
Color.Crimson	Color.LightCoral	Color.Red
Color.Cyan	Color.LightCyan	Color.RosyBrown
Color.DarkBlue	Color.LightGoldenrodYellow	Color.RoyalBlue
Color.DarkCyan	Color.LightGray	Color.SaddleBrown
Color.DarkGoldenrod	Color.LightGreen	Color.Salmon
Color.DarkGray	Color.LightPink	Color.SandyBrown
Color.DarkGreen	Color.LightSalmon	Color.SeaGreen
Color.DarkKhaki	Color.LightSeaGreen	Color.SeaShell
Color.DarkMagenta	Color.LightSkyBlue	Color.Sienna
Color.DarkOliveGreen	Color.LightSlateGray	Color.Silver
Color.DarkOrange	Color.LightSteelBlue	Color.SkyBlue
Color.DarkOrchid	Color.LightYellow	Color.SlateBlue
Color.DarkRed	Color.Lime	Color.SlateGray
Color.DarkSalmon	Color.LimeGreen	Color.Snow
Color.DarkSeaGreen	Color.Linen	Color.SpringGreen
Color.DarkSlateBlue	Color.Magenta	Color.SteelBlue
Color.DarkSlateGray	Color.Maroon	Color.Tan
Color.DarkTurquoise	Color.MediumAquamarine	Color.Teal
Color.DarkViolet	Color.MediumBlue	Color.Thistle
Color.DeepPink	Color.MediumOrchid	Color.Tomato
Color.DeepSkyBlue	Color.MediumPurple	Color.Turquoise
Color.DimGray	Color.MediumSeaGreen	Color.Violet
Color.DodgerBlue	Color.MediumSlateBlue	Color.Wheat
Color.Firebrick	Color.MediumSpringGreen	Color.White
Color.FloralWhite	Color.MediumTurquoise	Color.WhiteSmoke
Color.ForestGreen	Color.MediumVioletRed	Color.Yellow
Color.Fuchsia	Color.MidnightBlue	Color.YellowGreen
Color.Gainsboro	Color.MintCream	
Color.GhostWhite	Color.MistyRose	
	Color.Moccasin	

