

Functions by question type

Barcode

- [Length](#): Checks the number of characters
- [StartsWith](#): Checks that the barcode starts with specific characters
- [EndsWith](#): Checks that the barcode ends with specific characters
- [IsNumber](#): Checks that the barcode is a number
- [ConsistsOf](#): Checks that the barcode consists of a specific set characters

Date

- [Relational Operators](#): Less than, greater than, equal to, etc
- [InRange](#): Checks if the date falls within an interval.

GPS

- [Longitude, Latitude, Accuracy, and Altitude](#): Retrieves the latitude/longitude/accuracy/altitude of a GPS coordinate.
- [InRectangle](#): Check if the coordinates are inside a rectangle.
- [GpsDistance](#): Calculate the distance between two coordinates in meters.
- [GpsDistanceKm](#): Calculate the distance between two coordinates in kilometers.

List

- [Length](#): Checks the number of items listed
- [Item2](#): Refers to the text element of an item listed in a list question

Multi-select1: Series of tick boxes or Series of yes/no questions

- [Contains](#): Checks whether the answers to question contain a specified value.
- [ContainsOnly](#): Contains only the specified value
- [ContainsAll](#): Check whether the answers contain all of the specified values.
- [ContainsAny](#): Contains at least one of the specified values
- [!ContainsAny](#): Contains none of the specified values.
- [Length](#): Computes the number of answers to a multi-select question.

Numeric

- [Relational Operators](#): less than, greater than, equal to, etc
- [InRange](#): Checks if the number falls within a range
- [InList](#): Checks if the number falls within a list of numbers

Rosters

Rosters are common survey instruments (ie household roster, assets roster, food consumption roster). Using Language Integrated Query (LINQ) and lambda expressions in the C# language, we are able to code enabling and validation conditions for rosters that can both:

- [Horizontally](#): Refer to the values of other variables for the current occurrence
- [Vertically](#): Refer to the values of the same variable for other items in the roster

There are many LINQ query operators that offer a range of query capabilities like filtering, sorting, projection, aggregation, etc. The most useful LINQ operators for Survey Solutions are:

- [All](#): Checks that all elements of the expression meet the query criteria. This operator returns true/false.
- [Any](#): Checks that at least one element of the expression meets the query criteria. This operator returns true/false.
- [Count](#): Counts the number of elements that meet the query criteria. This returns the count.
- [FirstOrDefault](#): Finds the first element that meets the query criteria. this returns the first element matching the query criteria. In most cases, this will be the first row that matches the search criteria. If no element matches the query criteria, then it returns null.

Single-select

- [Relational Operators](#) less than, greater than, equal to, etc.
- [InRange](#). Checks if the selected answer falls within a range of user-specified values.
- [InList](#). Checks whether the selected answer is among the set of enumerated values.
- [IsNoneOf](#). Confirms that the selected answer is not among the set of enumerated values.
- [CountValue](#). Counts the number of times a specified value is recorded as the answer to the set of enumerated questions.

Text

- [Length](#): *Checks the number of characters*
- ["A text"](#): *Checks that the response is exactly equal to a specified text ("A text")*
- [Contains](#): *Checks that the response includes a specified text*
- [ConsistsOf](#): *Checks that the response includes one or more of the specified characters*
- [IsAlphaLatin](#): *Checks that the response consists of latin characters*
- [IsAlphaLatinOrDelimiter](#): *Checks that the response consists of latin characters and delimiters*
- [IsNullOrWhiteSpace](#): *Checks that the response is null or consists of blank spaces*