Advanced Exam Study Guide

Advanced Preparation

Tools:

- Multi-Field Formula 
  - Use this tool when a need arises to apply a common formula across multiple columns (e.g., applying an UPPERCASE function to all TEXT fields – *Uppercase([_CurrentField_])*
- Multi-Row Formula 
  - Create Multi-Row Formula expressions using Row variables
  - Determine how to correctly configure the Multi-Row Formula tool for "values for rows that don't exist"
  - Be aware that you can use this tool to update an existing field or create a new field. For example, it may be easier to update an existing field to fill in missing values instead of creating a new field and referencing both the existing field and the new field (see the screenshot below).

Record	Report	Year	Total Sales
1	Report A	2017	5
2	Report B	[Null]	10
3	Report C	[Null]	15
4	Report D	2018	20
5	Report F	[Null]	25

- Random % Sample 
  - Identify how the Random % Sample tool selects and processes records to output

General tasks:

- Correctly format string expressions to produce a given output
- Identify the specifiers and separators that transform a given date
- Identify the results of a compound condition in the Filter tool (condition joined by and/or operators)
- Identify the output of complex expressions

Advanced Join & Parse

Tools:

- Join Multiple 
    - Determine the number of records that result from a multidimensional join
    - Identify how the Join Multiple tool processes records that don't match
- RegEx 
    - Identify the regular expression that would transform a given input to a given output
    - Differentiate Match and Parse output methods of the RegEx tool
        - The Match method evaluates a given regex against each cell in a column. It outputs a *True* or *False* (the screenshot below had a regular expression of "\d+" with the *Case Insensitive* box unchecked and the *Error if Not Matched* box unchecked).

Record	Column1	Is_Match
1	yo man that's cool	False
2	15	True
3	45	True
4	okay, yeah I get it	False
5	heh 14.22	False
6	t34	False

        - The Parse method allows you to extract data from a cell by evaluating a regex. Marked groups (i.e., surrounding parts of the regex with parentheses) are required. Each marked group represents a new column that will be created.

Spatial Analytics

Tools:

- Buffer 
- Create Points 
- Distance 
- Find Nearest 
- Generalize 
- Poly-Build 
- Poly-Split 
- Spatial Info 
- Spatial Match 
- Spatial Process 
    - The Spatial Process tool requires 2 polygon spatial objects and requires that they are both contained in the same row of data. Additional prep work is often required to get the data into the correct format to be used with this tool.
- Trade Area 

General tasks:

- Identify which tools can generate the centroid of a polygon <- Create Points, Spatial Info (Centroid as SpatialObj), Summarize (Create Centroid), Formula (ST_Centroid)
- Interpret the results of interactions between Target and Universe objects
- Differentiate the functionality of the T and U input anchors of the Find Nearest tool

- Identify the spatial object that's created from the intersection of two spatial objects
- Identify the output of a Convex Hull build method
- Determine how the Distance tool outputs the distance of a point within a polygon to the nearest edge of the polygon
- Identify the tool that can decrease the number of nodes that make up a polyline or polygon
- Configure the Trade Area tool to create doughnuts
- Identify spatial functionality within the Summarize tool
- Identify spatial functionality within the Formula tool

Reporting

Tools:

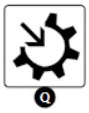
- Interactive Chart 
  - Identify configuration options in the Interactive Chart tool
- Layout 
  - Determine how the Layout tool arranges snippets
- Overlay 
  - Identify the tool that can place reporting snippets on top of one another
- Render 
  - Identify the ways the Render tool can write out reporting snippets
- Report Map 
  - Identify the default outputs of the Report Map tool
- Report Text 
  - Determine ways the Report Text tool can accept incoming data
- Table 
  - Identify configuration options of the Table tool

General tasks:

- Identify the tools used to produce a given report
- Determine how to achieve batch reporting with the Reporting tools

Macros

Tools:

- Control Parameter 
- Macro Input 
- Macro Output 

General tasks:

- Determine which kind of macro (standard, iterative, batch) is the best solution for a given scenario
- Identify the number of outputs an iterative macro can produce
- Identify common reasons macros error
- Determine how to debug a macro interface
- Differentiate the functionality of macros versus apps
- Determine how to use an engine iteration number
- Configure a batch macro and an iterative macro

Analytic Applications

Tools:

- Action 
    - Determine when an Action tool is required between Interface and workflow tools
- Check Box 
- Drop Down 
    - Correctly format list values for the Drop Down tool
- Error Message 
- File Browse 
- Folder Browse 
- List Box 
- Map 
    - Identify ways app users can interact with interface elements from the Map tool
- Numeric Up Down 
- Radio Button 
- Text Box 
- Tree 

General tasks:

- Configure chained applications
- Identify the Interface tools used to create a given App interface
- Identify which Interface tools can be used to input or output data in an App
- Identify common reasons why apps error

Data Investigation

Tools:

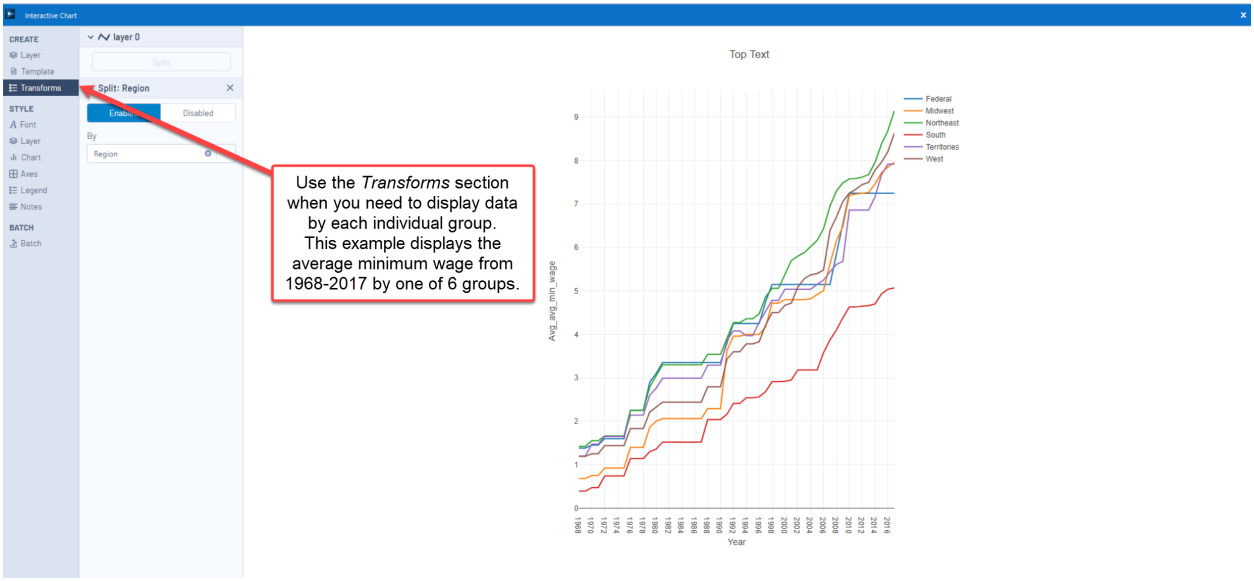
- Association Analysis 
- Field Summary 
- Frequency Table 
- Pearson Correlation 
  - Interpret the output of the Pearson Correlation tool and identify the variables that have the strongest correlation
- Scatterplot 
  - Identify the configuration of the Scatterplot tool that produces a given graph
- Spearman Correlation 
  - Interpret the output of the Spearman Correlation tool

General tasks:

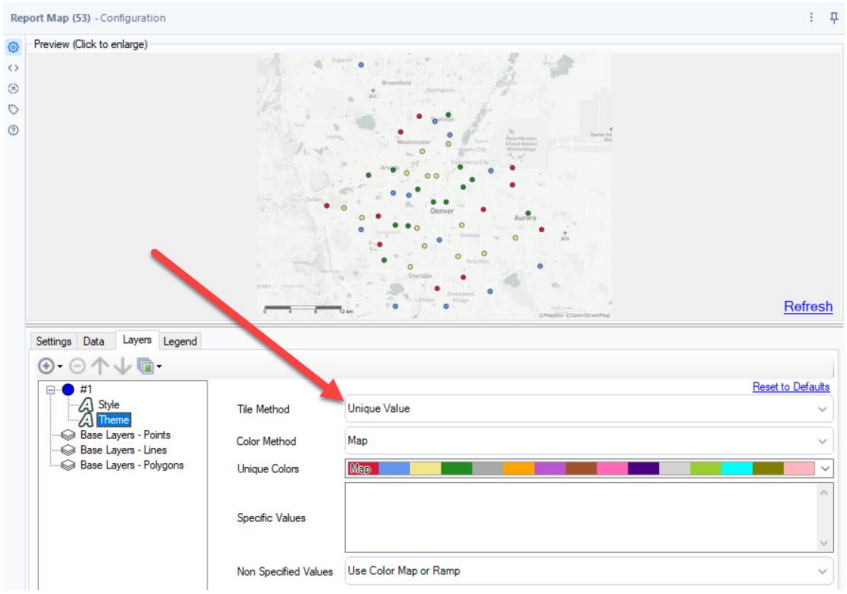
- Determine how to find p-values for correlations
- Differentiate the Spearman Correlation and Pearson Correlation tools
- Identify the tool that provides remarks and suggestions on data quality <- this is the ***Field Summary*** tool.

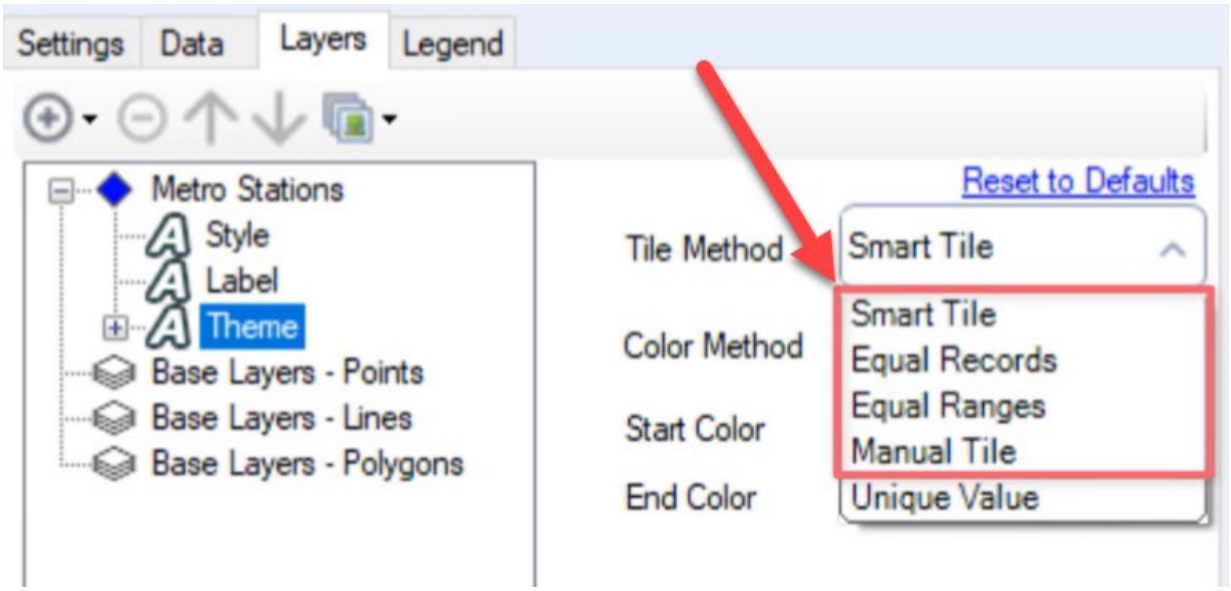
Suggested Readings/Tips

- Convex hull of a simple polygon
- https://regex101.com/
- Pearson correlation coefficient
- [Tip] Have open on test day: https://help.alteryx.com/20221/designer/datetime-functions
- [Tip] Count weekday difference between two dates: https://community.alteryx.com/t5/Alteryx-Designer-Discussions/Count-workday-difference-between-2-dates/td-p/92579
- [Tip] How to generate totals and subtotals: https://community.alteryx.com/t5/Engine-Works/How-to-Generate-and-Format-Totals-and-Subtotals/ba-p/916853
- [Reporting] Understand how to display grouped data within an *Interactive Chart* tool. This example is from Weekly Challenge 201.

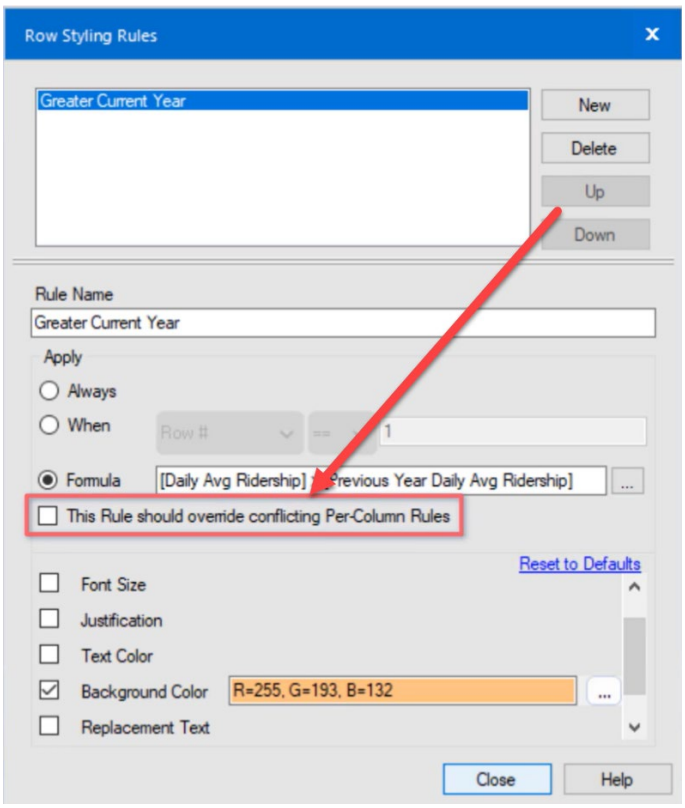


- [Reporting] Understand how to use thematic fields in the *Report Map* tool. This example is from Weekly Challenge 218. Categorical fields (e.g., Vehicle Type) are displayed with a Tile Method of *Unique Value* and a Color Method of *Map*. Numerical fields (e.g., Sales) are displayed with one of the four Tile Methods shown in the second screenshot below and with a Color Method of *Ramp*.

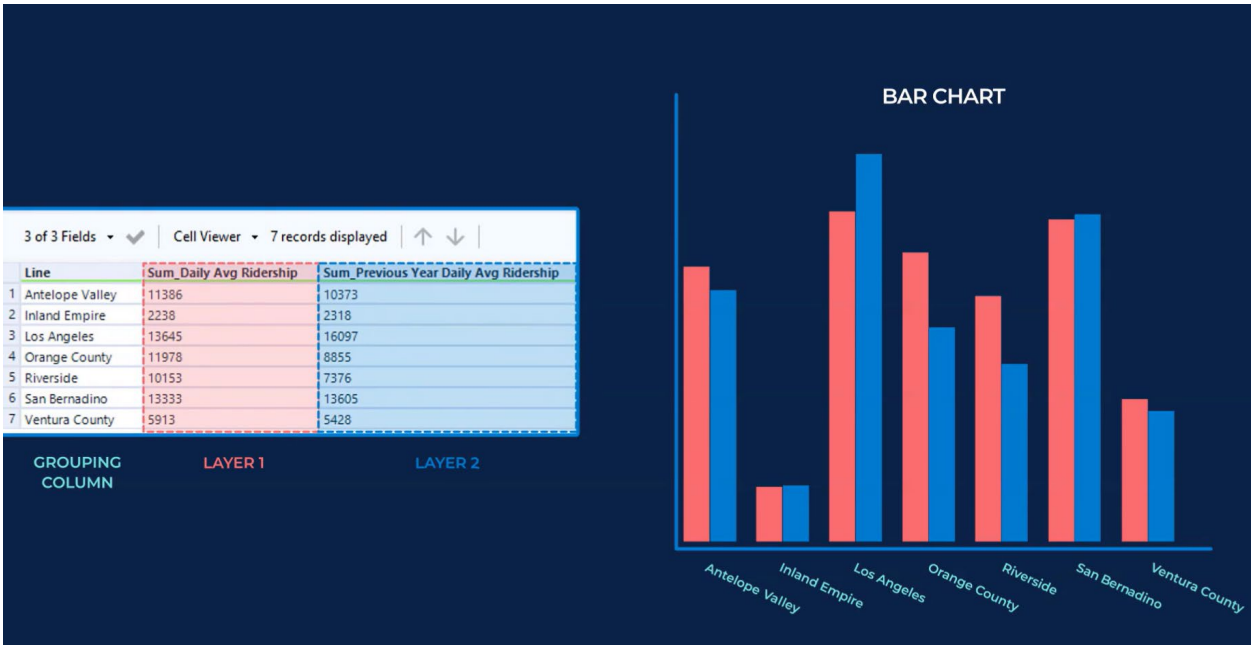




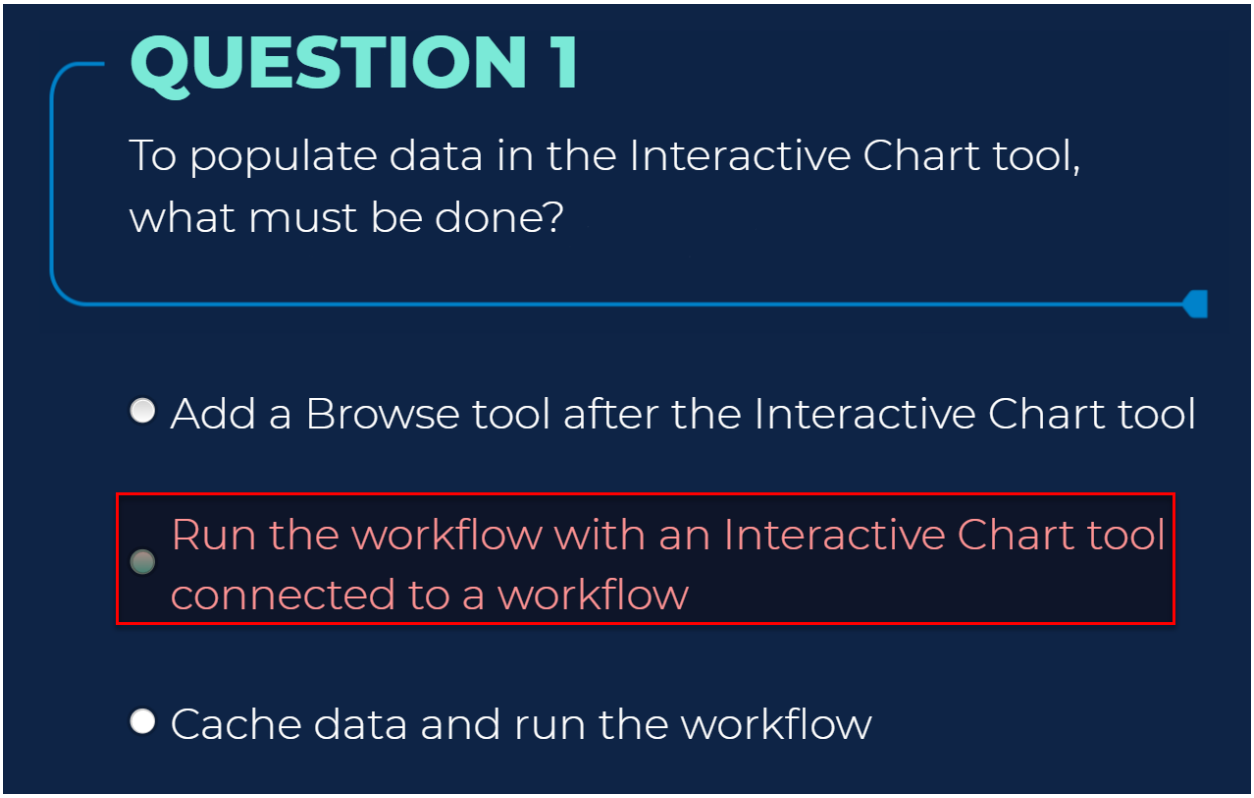
- [Reporting] When a row rule and column rule interfere with each other, the default is for the column rule to override the row rule. This can be swapped by selecting this box:



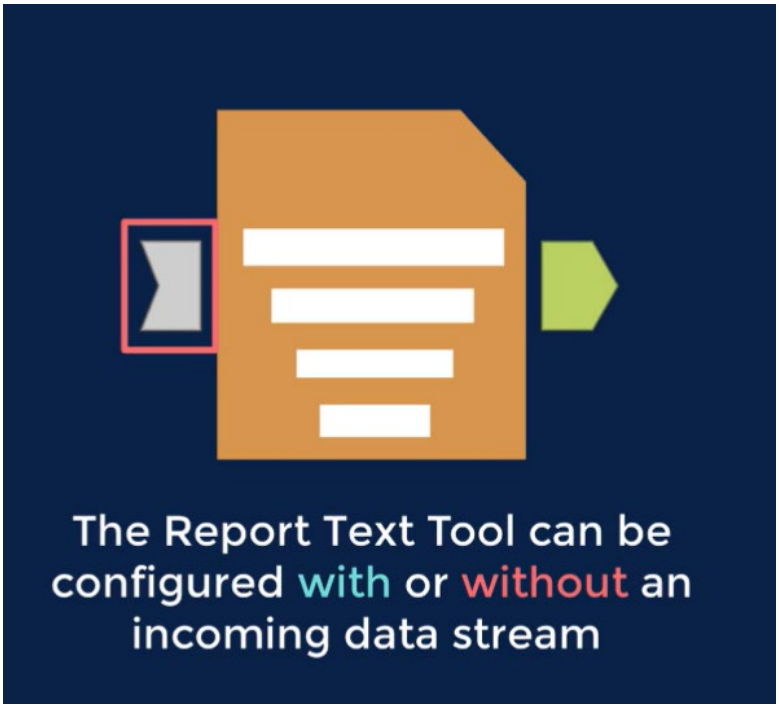
- [Reporting] If you want to compare prior year's and current year's data, for example, you will create two layers so the bar chart uses the same x axis, but each layer has its own data (as shown in the screenshot below).



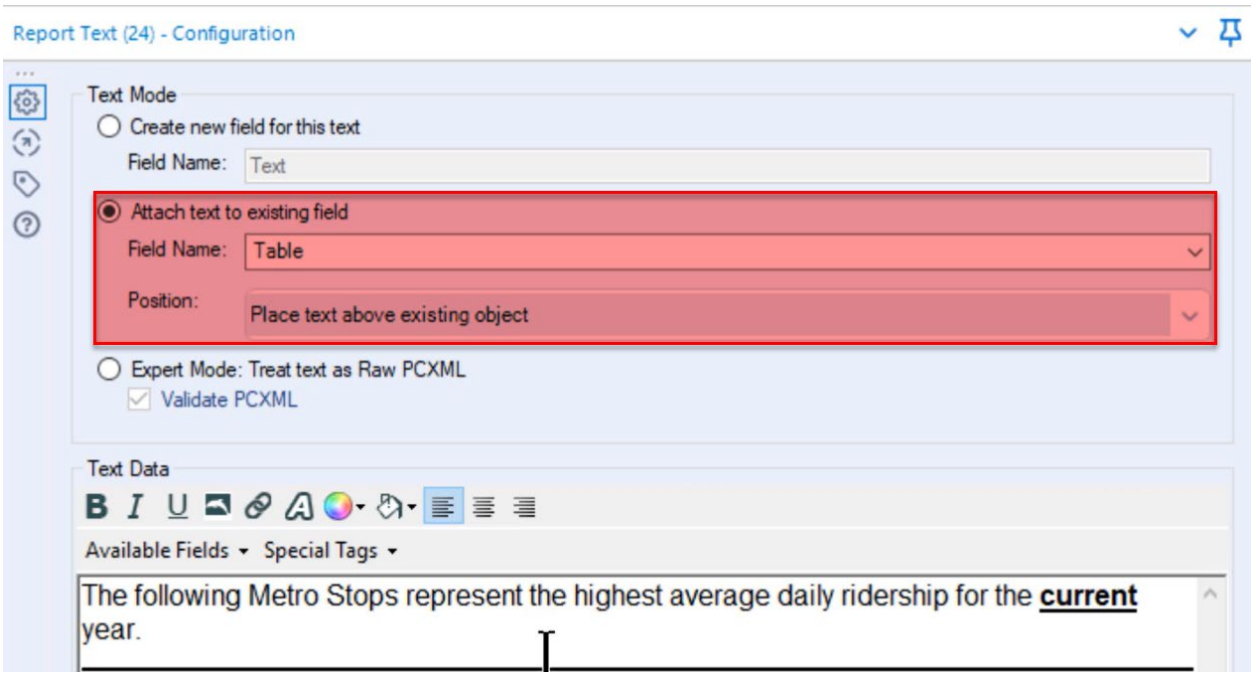
- [Reporting]

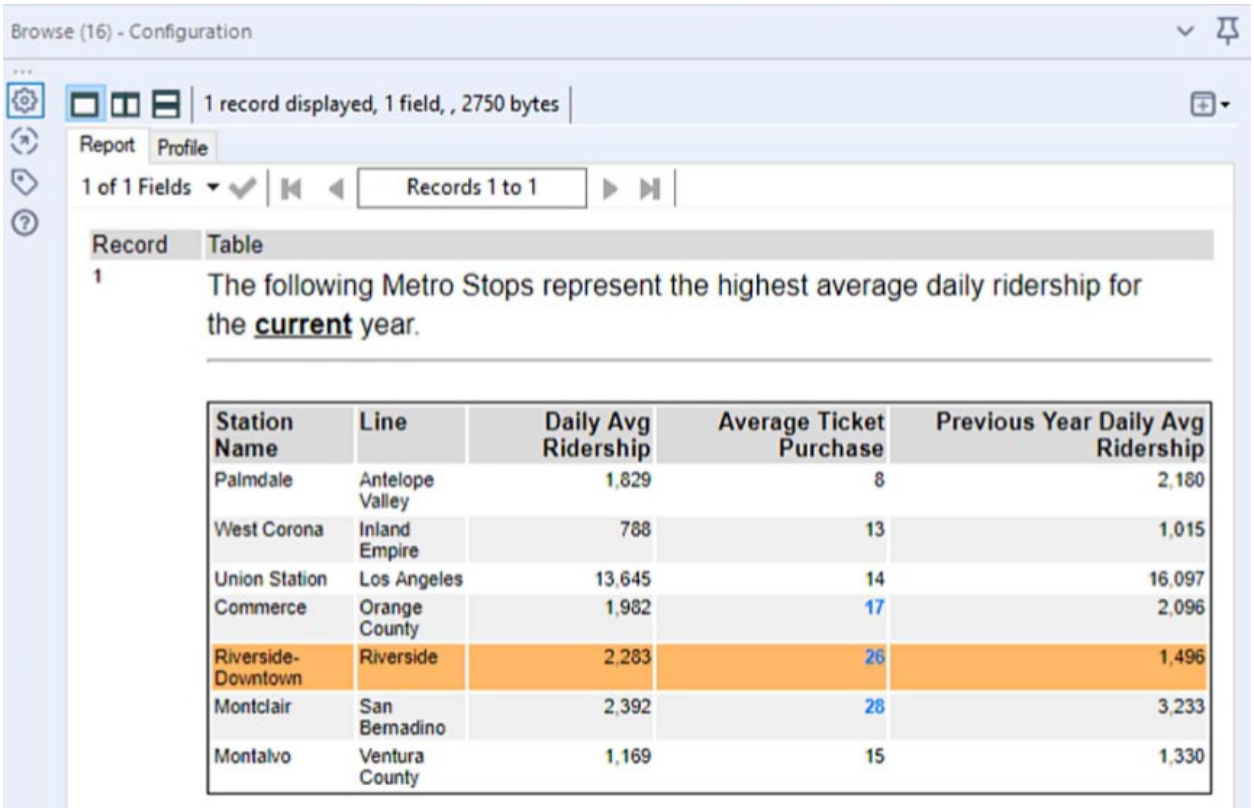


- [Reporting]



- [Reporting] Use case for displaying text above a field, like a header, by using a *Report Text* tool:





Station Name	Line	Daily Avg Ridership	Average Ticket Purchase	Previous Year Daily Avg Ridership
Palmdale	Antelope Valley	1,829	8	2,180
West Corona	Inland Empire	788	13	1,015
Union Station	Los Angeles	13,645	14	16,097
Commerce	Orange County	1,982	17	2,096
Riverside-Downtown	Riverside	2,283	26	1,496
Montclair	San Bernadino	2,392	28	3,233
Montalvo	Ventura County	1,169	15	1,330

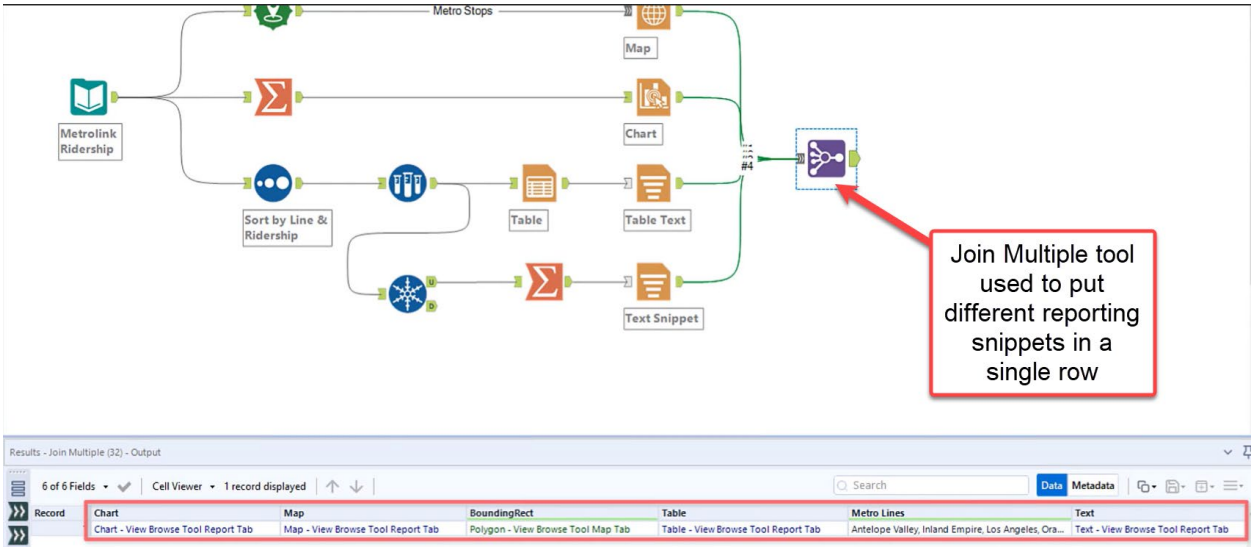
- [Reporting]

QUESTION 2

An incoming dataset contains two columns. With the Report Text tool configured to attach text to an existing field, how many columns will the output have?

- 1
- 2
- 3
- Impossible to tell

- [Reporting] When adding multiple reporting snippets together, for example, when creating a report, use the *Join Multiple* tool instead of the *Union* tool. The difference is that the *Join Multiple* tool will output all the different tools in a single row, whereas the *Union* tool will output several rows because of the different types of reporting snippets.



- [Reporting]

QUESTION 2

Which of the following statements regarding the Layout tool are true?

- [x] The height and width of a layout can be specified.
- [ ] Report Snippets *not* selected in the Layout Tool's configuration cannot be included in the tool's output.
- [x] Report Snippets can be ordered from top to bottom for vertical layouts, and left to right for horizontal layouts.

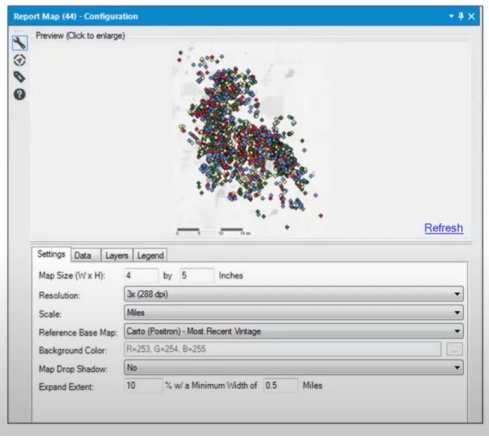
- [Reporting]

Header and Footer snippets can be utilized in the Render Tool

- [Reporting]

REPORT MAP TOOL

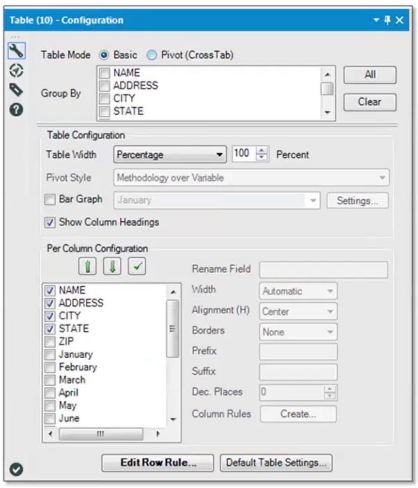
- **Allows you to generate maps:**
  - Must have Spatial Data
    - Point, Line, or Polygon Data
  - Handles Multiple Data Streams
- **Label Connection Inputs for Data Layers**
- **Thematic mapping**
- **Zoom in or out from Map Extent**
  - Zoom Out-Positive values (0 to 99)
  - Zoom In-Negative values (0 to -99)
- **Inset maps (Bounding rectangle)**



- [Reporting]

TABLE TOOL

- **Allows you to create data tables:**
  - Basic Table
  - Pivot Table (Only if streaming from a CrossTab Tool)
- **Configure size of Table**
- **Select Fields to Display**
- **Default Table Settings**
  - Format Header
- **Create Column and Row Rules**
  - Conditional Formatting

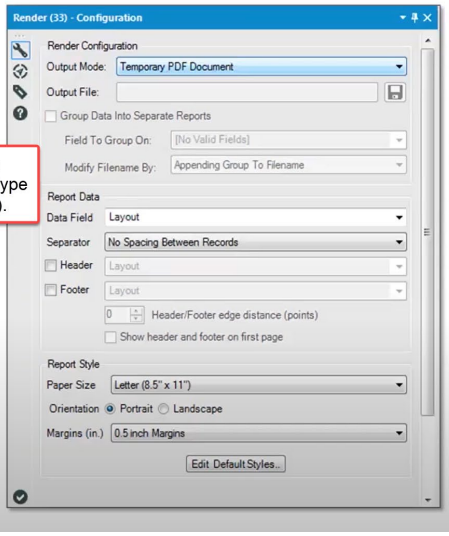


- [Reporting]

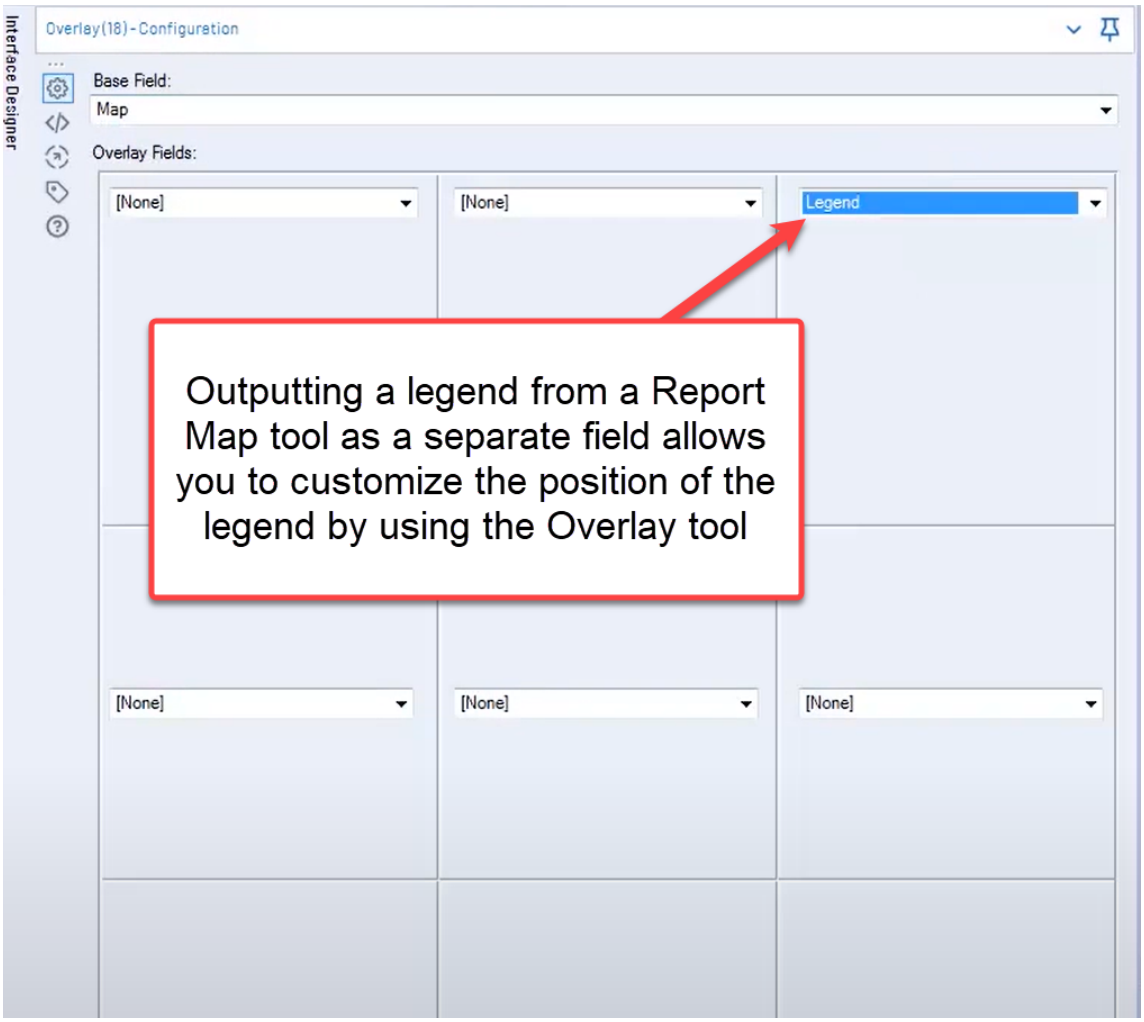
RENDER TOOL

- **Transforms all report snippets into reports**
  - PDF Document (*.pdf)
  - HTML (*.html)
  - Word Document (*.docx)
  - PowerPoint (*.pptx)
  - Excel (*.xlsx) beware of paper size
- **Group Data into separate reports**
- **Snippets can be used as Headers/Footers**
- **Filename can be modified by:**
  - Appending/Prepending
  - Replace Filename with Group Name

Can only be done when outputting to a specific file type (i.e., not a temporary file).

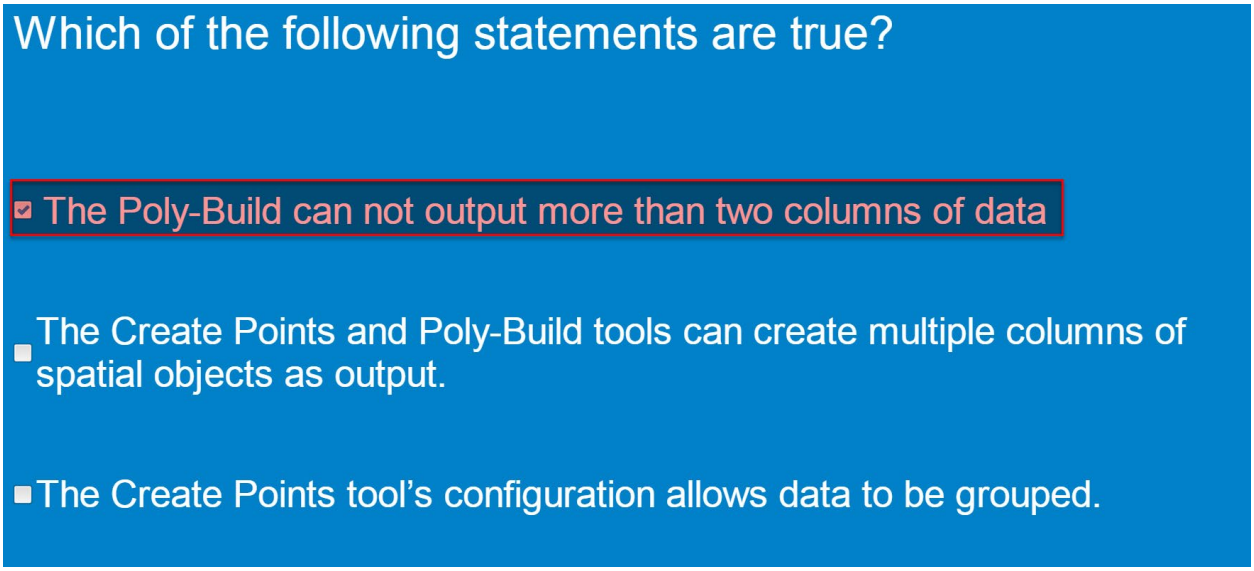


- [Reporting]



- [Reporting]

- [Spatial]



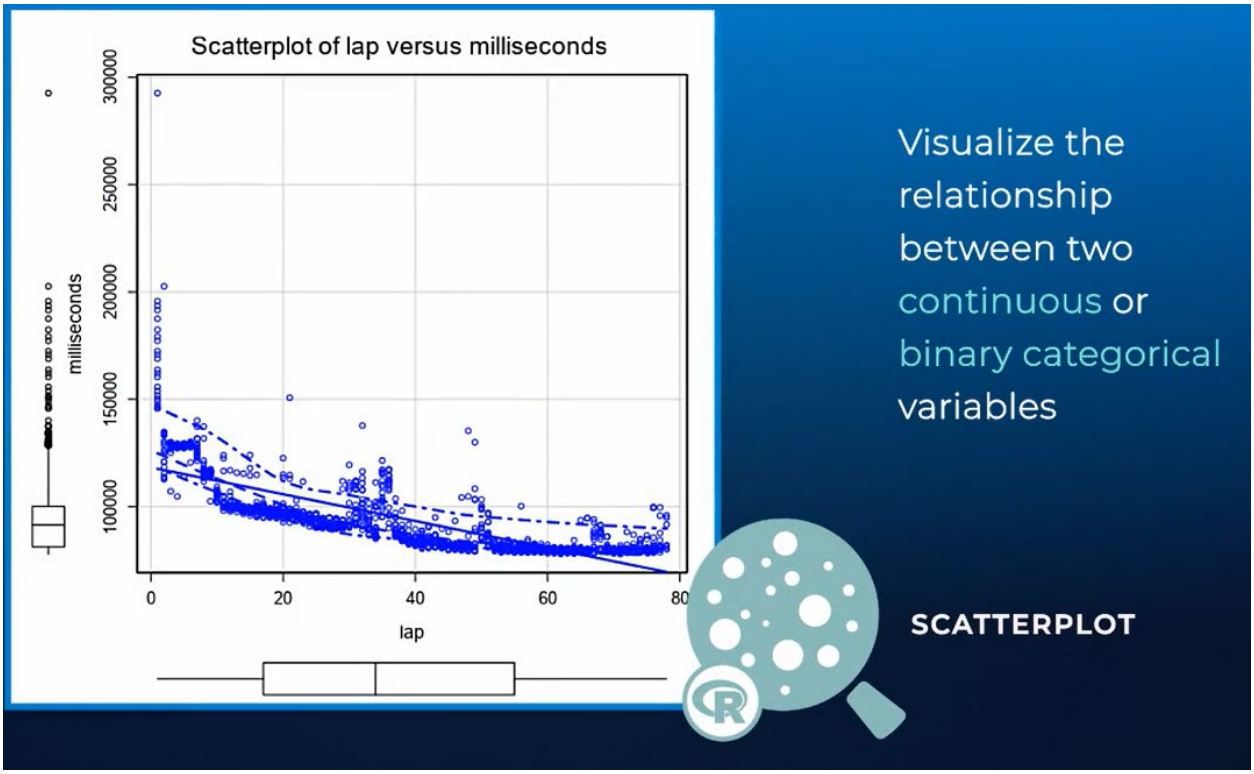
- [Data Investigation]

- [Data Investigation] Field Summary tool

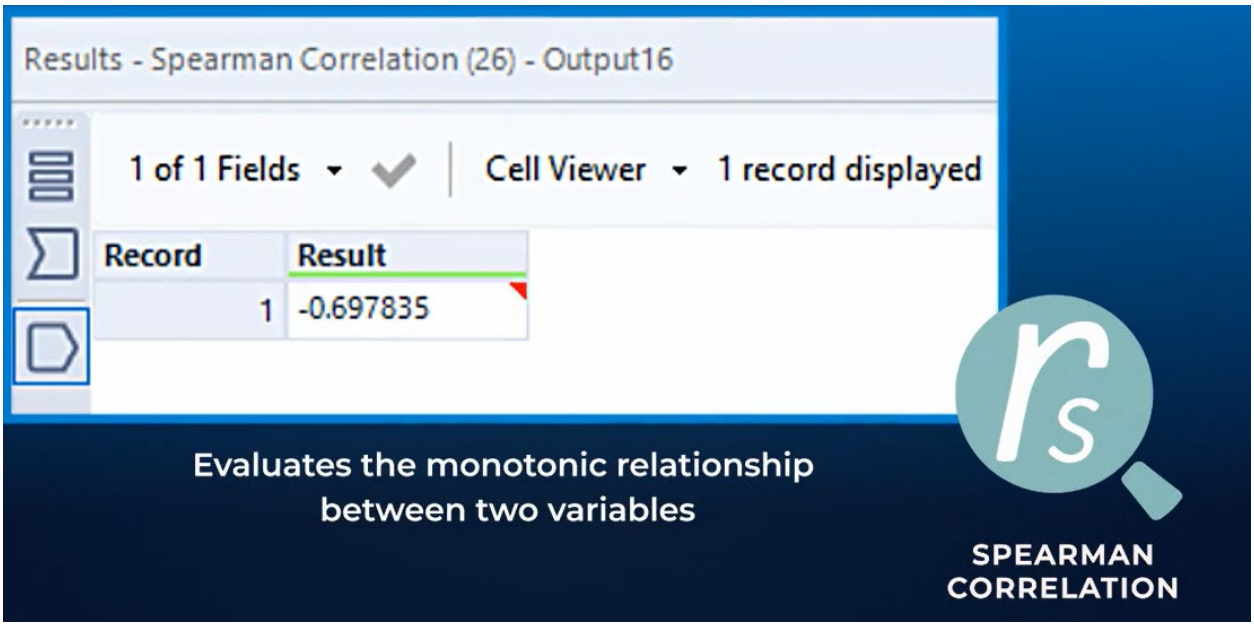
FIELD SUMMARY

- Provides an overview of the dataset
- Breakdown of each variable
  - Percent values missing
  - Number of unique values
- Numeric fields: min, max, median, standard deviation
- String fields: shortest and longest values

- [Data Investigation] Scatterplot tool



- [Data Investigation] Spearman Correlation tool

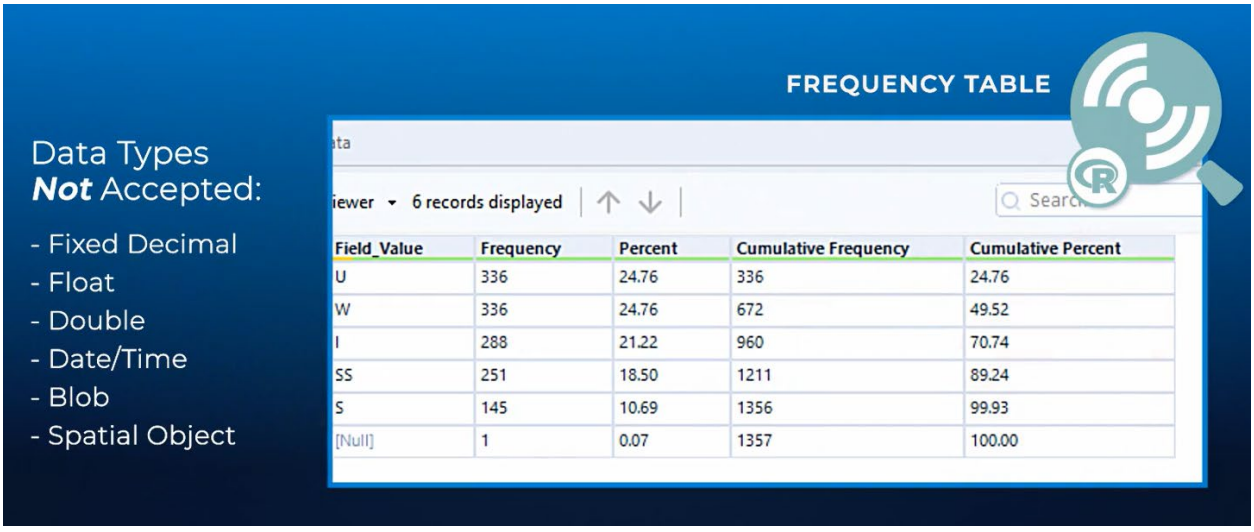


Difference Between Cardinal and Ordinal Numbers

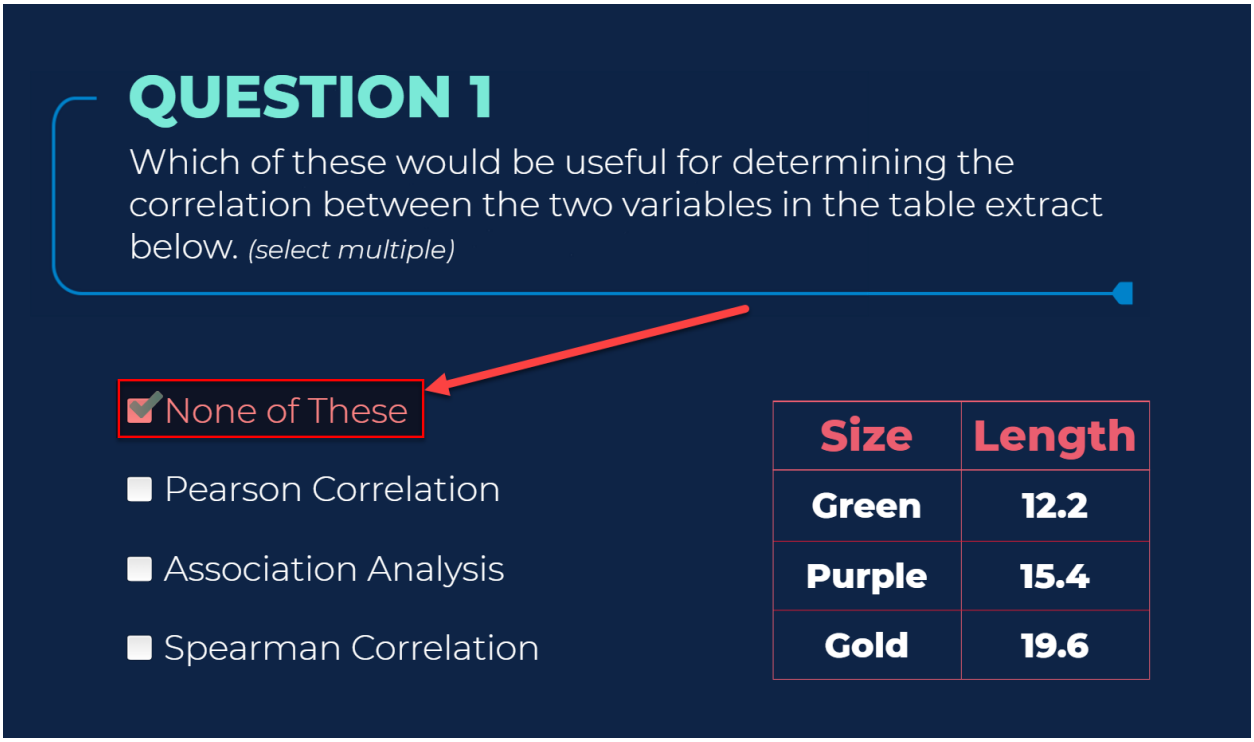
cuemath
THE MATH EXPERT

Cardinal Numbers		Ordinal Numbers	
1	one	1th	first
2	two	2nd	second
3	three	3rd	third
4	four	4th	fourth
5	five	5th	fifth
6	six	6th	sixth
7	seven	7th	seventh
8	eight	8th	eighth
9	nine	9th	ninth
10	ten	10th	tenth
11	eleven	11th	eleventh
12	twelve	12th	twelfth
13	thirteen	13th	thirteenth
14	fourteen	14th	fourteenth
15	fifteen	15th	fifteenth
16	sixteen	16th	sixteenth
17	seventeen	17th	seventeenth
18	eighteen	18th	eighteenth
19	nineteen	19th	nineteenth
20	twenty	20th	twentieth

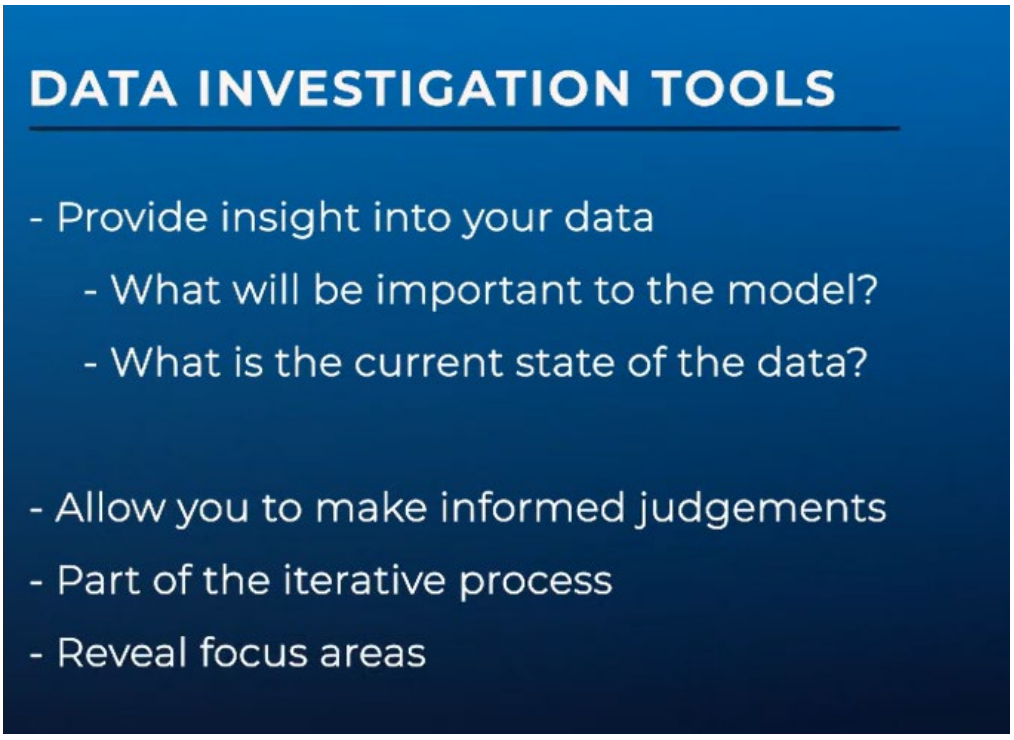
- [Data Investigation] Frequency Table



- [Data Investigation]



- [Data Investigation] General information



- [Parsing]

QUESTON 1

Select the combination of values that can be output from the RegEx Match function.

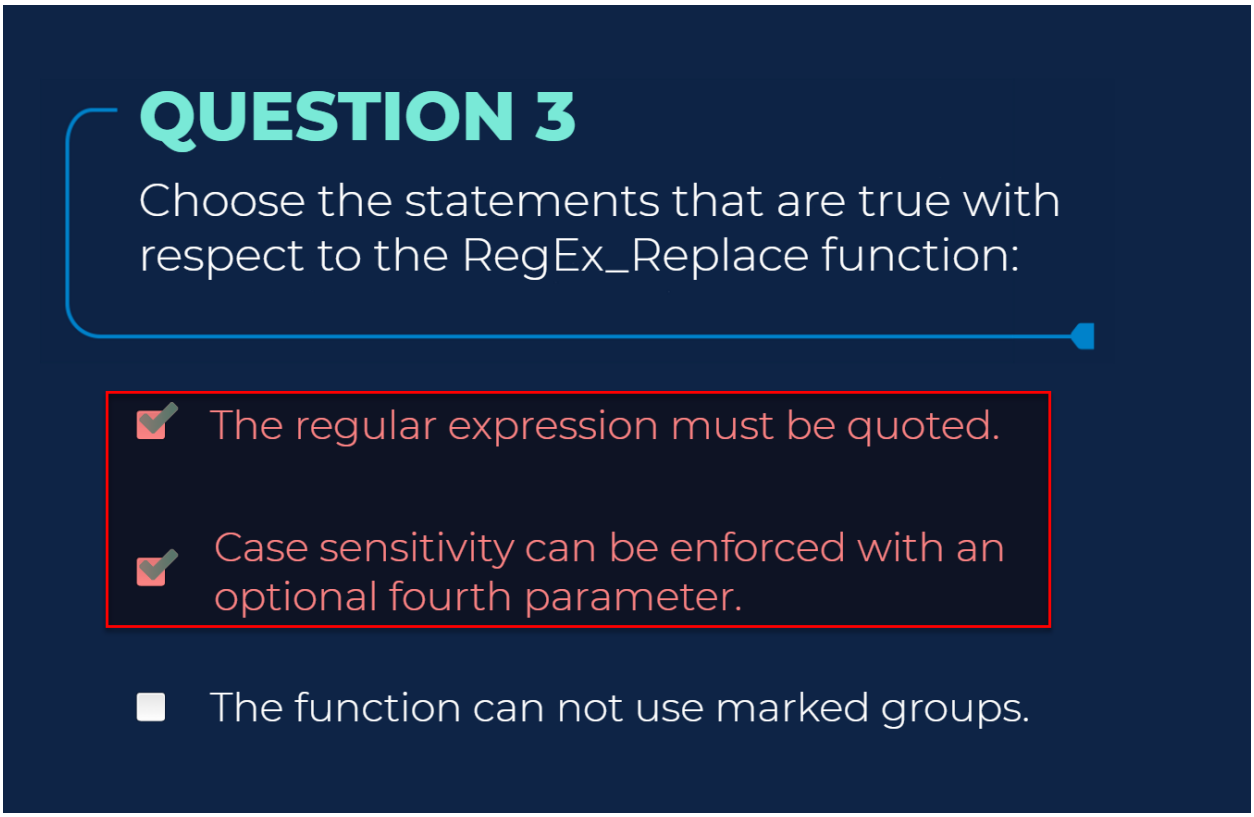
- True, False
- 0, 1
- 0, -1

QUESTION 2

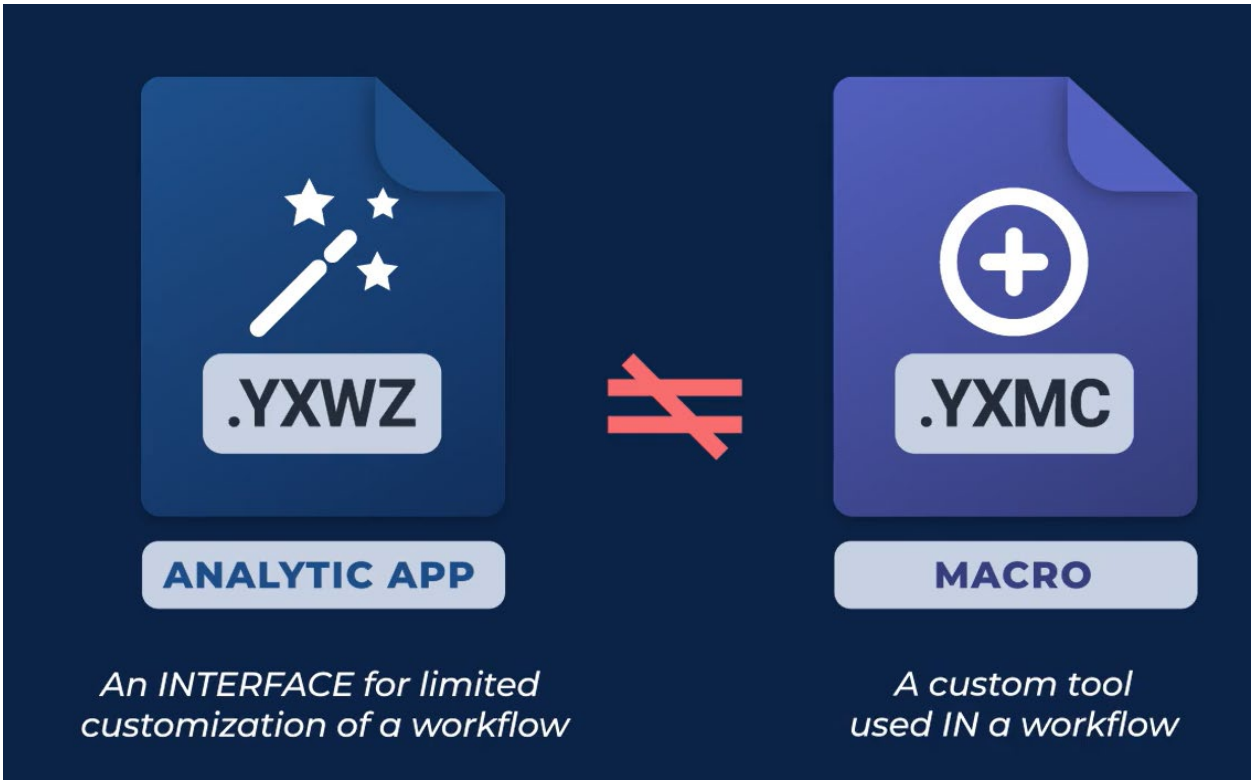
Which function was used to create the value in the column [New] if the regular expression applied is: **"\w+\s\d+"?**

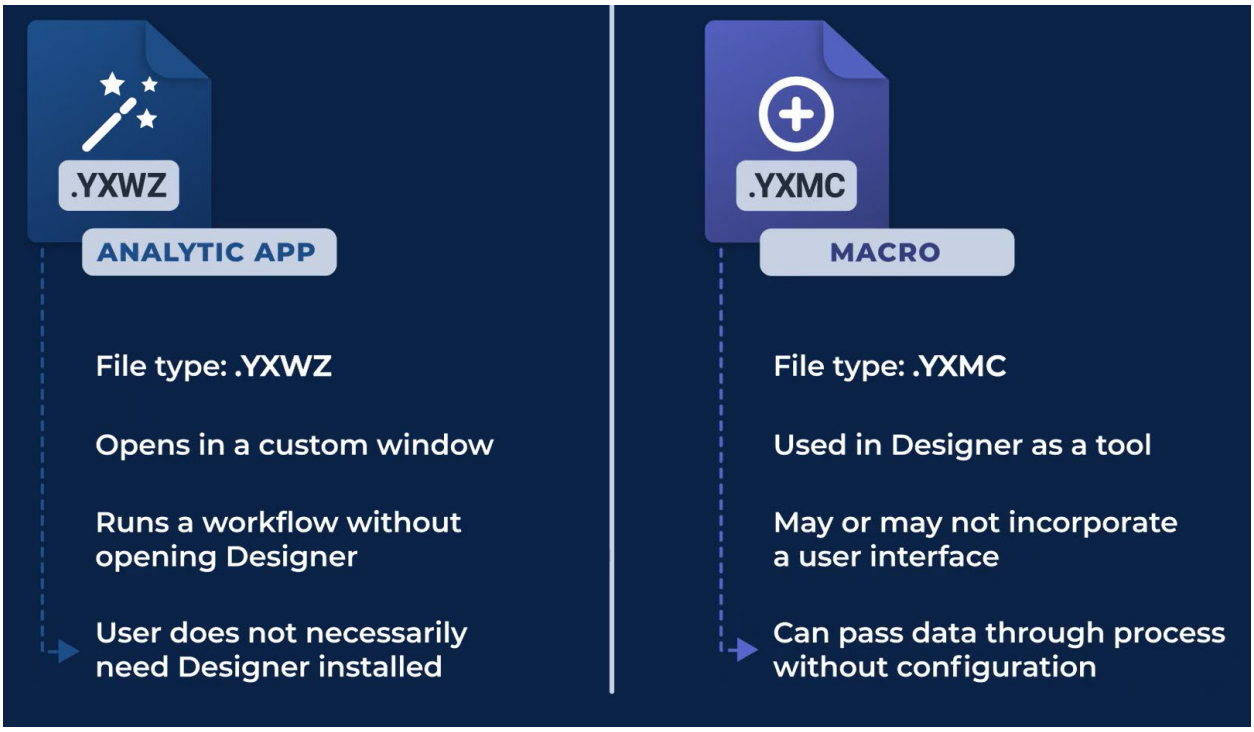
Column 1	New
JoeM 2015 ChristineB 2016 ElizabethB 2018	3

- RegEx_CountMatches
- RegEx_Match
- RegEx_Replace


QUESTION 3
Choose the statements that are true with respect to the RegEx_Replace function:
The regular expression must be quoted.
Case sensitivity can be enforced with an optional fourth parameter.
The function can not use marked groups.

- [Macros]


.YXWZ
ANALYTIC APP
An INTERFACE for limited customization of a workflow
.YXMC
MACRO
A custom tool used IN a workflow



QUESTION 3

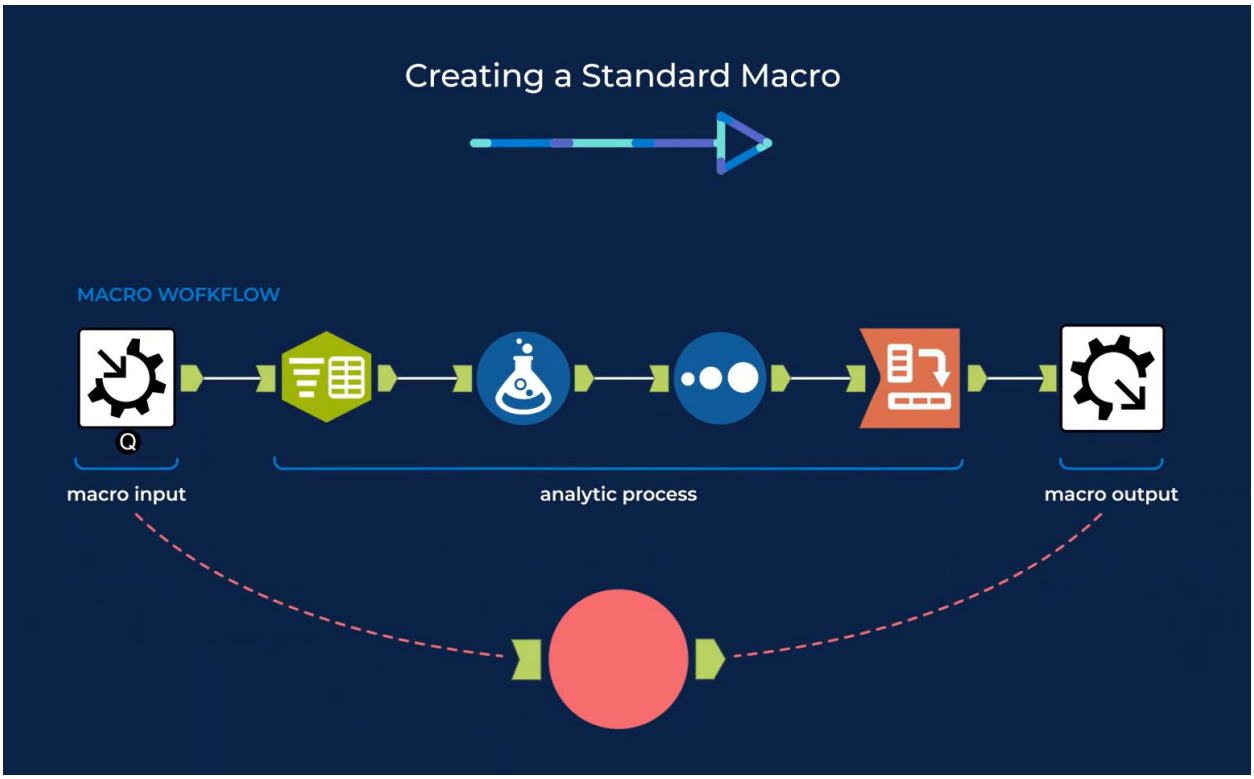
Select all that are true:

- [x] Macros use Interface Tools to generate their configuration windows.
- [x] To open a Macro, a user must have Designer installed on their computer.
- [ ] All Analytic Apps contain at least one macro.

QUESTION 3

Which types of Macros are associated with loops?

- [ ] None of these
- [ ] Batch Macros
- [x] Iterative Macros
- [ ] Standard Macros



QUESTION 3

How can a Macro be inserted into an existing workflow?

- [x] Create a custom tool palette in “user settings”
- [ ] Drag a .yxmc file onto the canvas
- [x] Right click on the canvas & select “Macro” from the “Insert” menu

QUESTION 1

Which of the following are true concerning interface tool anchors?

- [x] Q icons represent “question.”
- [ ] These anchors only appear when the workflow is configured to “Analytic App”
- [x] Lightning Bolt icons represent “action.”
- [ ] Only interface tools have Q and Lightning bolt anchors.

- True
- False

QUESTION 2

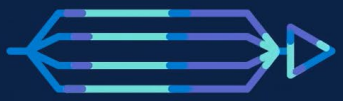
An action tool is required to connect a Q anchor to a Lightning Bolt anchor.

QUESTION 3

Which languages can be leveraged to directly modify the function of tools in Designer?

- [x] XML
- [ ] CSS
- [ ] Javascript
- [ ] HTML

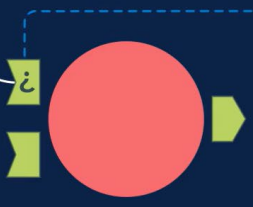
MACRO TYPES



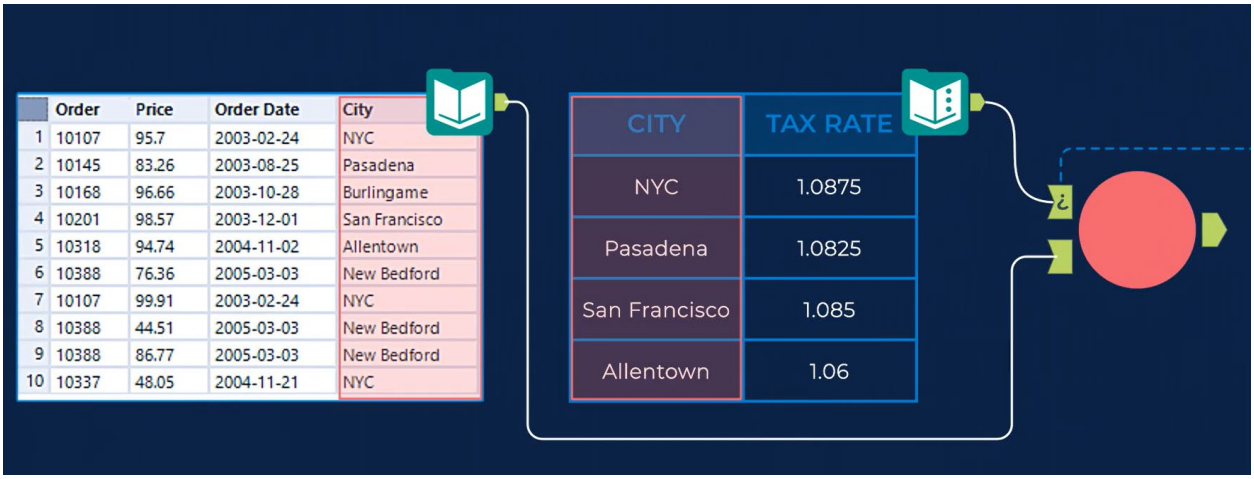
batch

Batches Modifier

	CITY	TAX RATE
Group 1	NYC	1.0875
Group 2	Pasadena	1.0825
Group 3	San Francisco	1.085
Group 4	Allentown	1.06

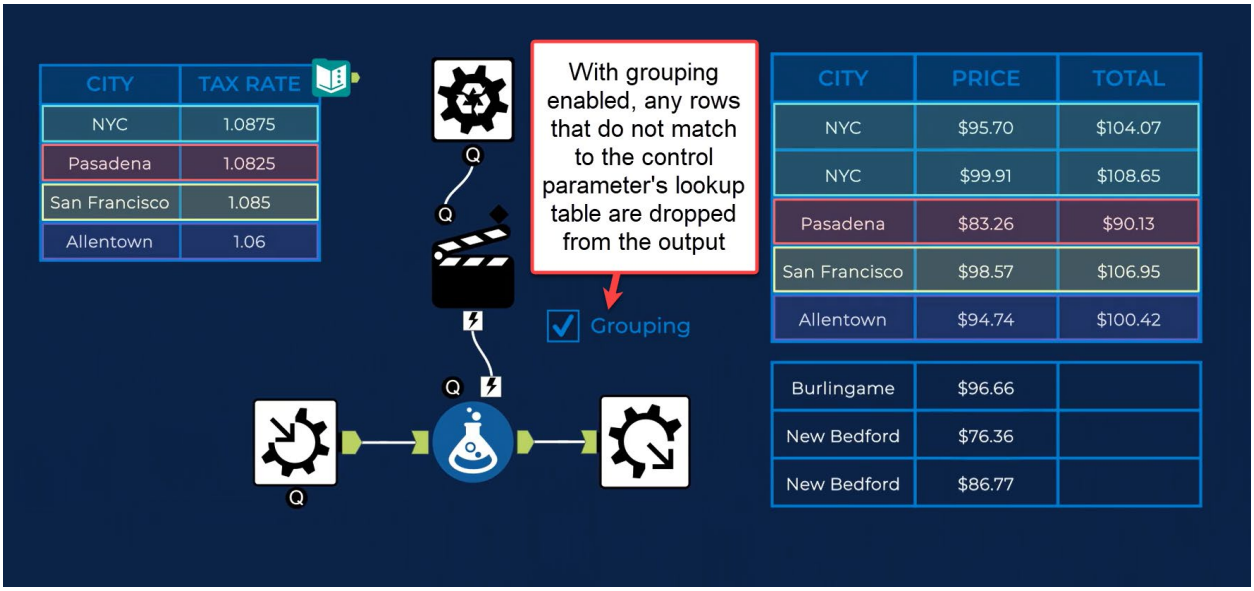


CONTROL PARAMETER TOOL



	Order	Price	Order Date	City
1	10107	95.7	2003-02-24	NYC
2	10145	83.26	2003-08-25	Pasadena
3	10168	96.66	2003-10-28	Burlingame
4	10201	98.57	2003-12-01	San Francisco
5	10318	94.74	2004-11-02	Allentown
6	10388	76.36	2005-03-03	New Bedford
7	10107	99.91	2003-02-24	NYC
8	10388	44.51	2005-03-03	New Bedford
9	10388	86.77	2005-03-03	New Bedford
10	10337	48.05	2004-11-21	NYC

CITY	TAX RATE
NYC	1.0875
Pasadena	1.0825
San Francisco	1.085
Allentown	1.06

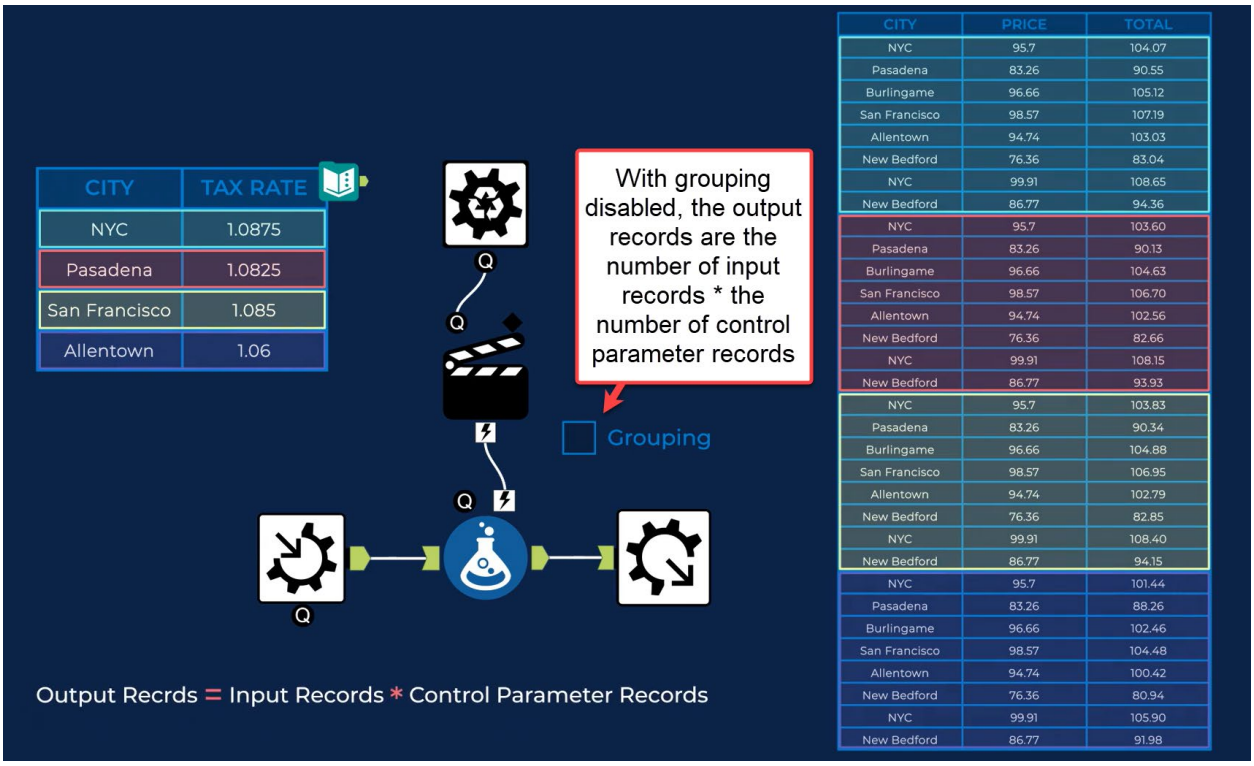


CITY	TAX RATE
NYC	1.0875
Pasadena	1.0825
San Francisco	1.085
Allentown	1.06

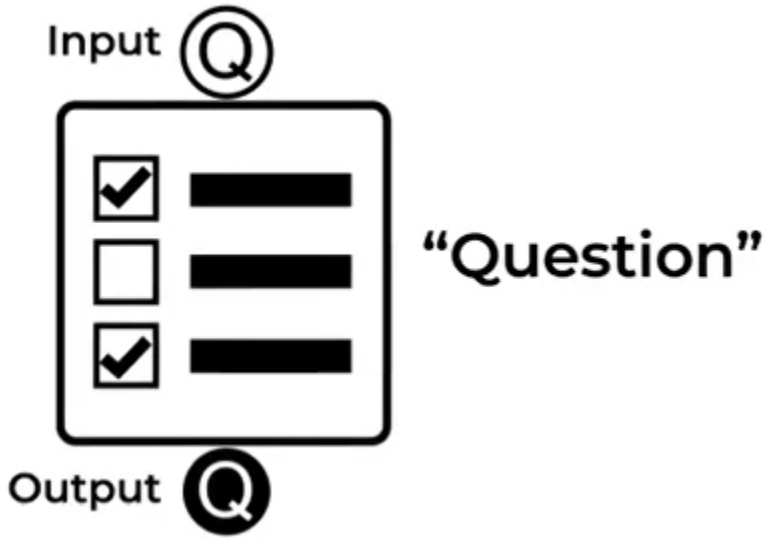
With grouping enabled, any rows that do not match to the control parameter's lookup table are dropped from the output

Grouping

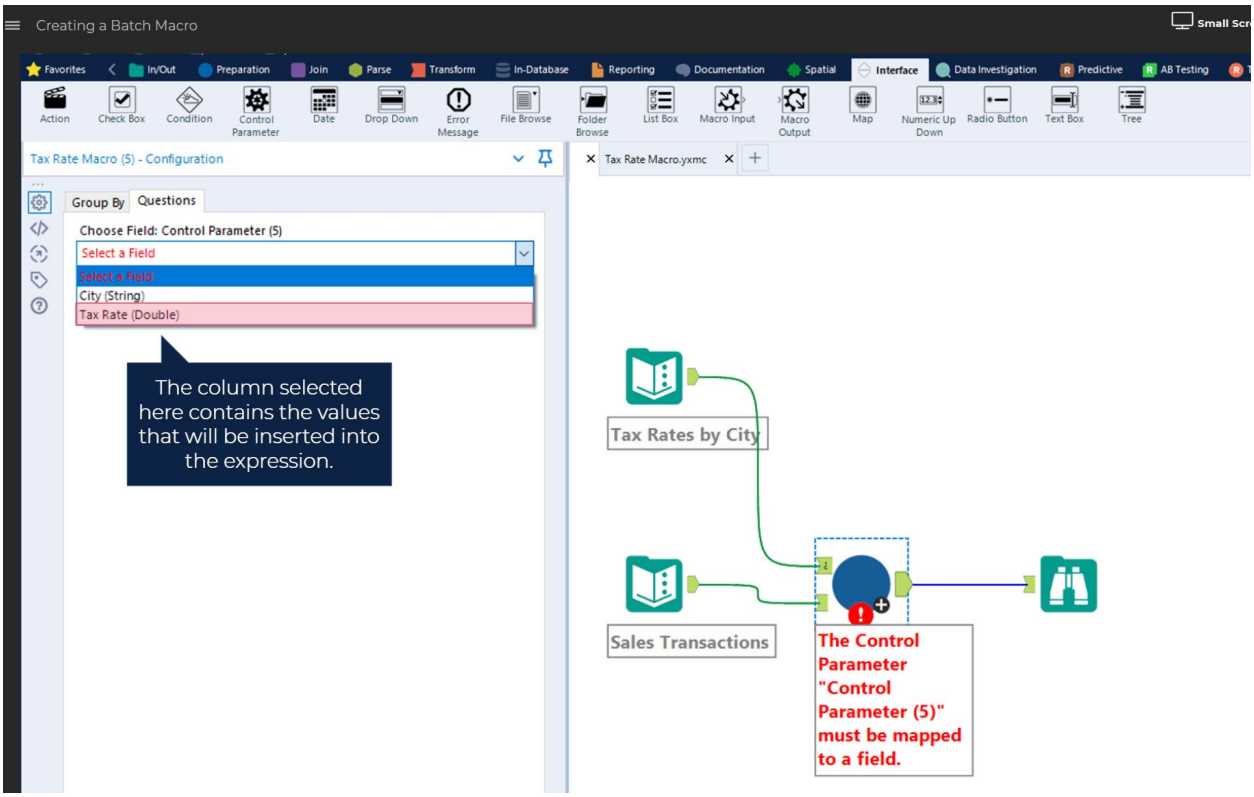
CITY	PRICE	TOTAL
NYC	$95.70	$104.07
NYC	$99.91	$108.65
Pasadena	$83.26	$90.13
San Francisco	$98.57	$106.95
Allentown	$94.74	$100.42
Burlingame	$96.66	
New Bedford	$76.36	
New Bedford	$86.77	



- [Analytic Apps] Q input and output



- [Macro] Relating to batch macros:



CONSIDERATIONS

- Input records *must* match with a batch group to be included in output
  - Unlike a Join, where unmatched records are kept in L/R anchors
- To troubleshoot, know how many records to expect in your output

- True
- False

QUESTION 2

When a batch macro is NOT configured for grouping, its behavior will be similar to a traditional Join.

MACRO TYPES

ENTIRE DATASET
SINGLE PROCESS

LOOPS RECORDS
SINGLE PROCESS
CONDITIONAL OUTPUT

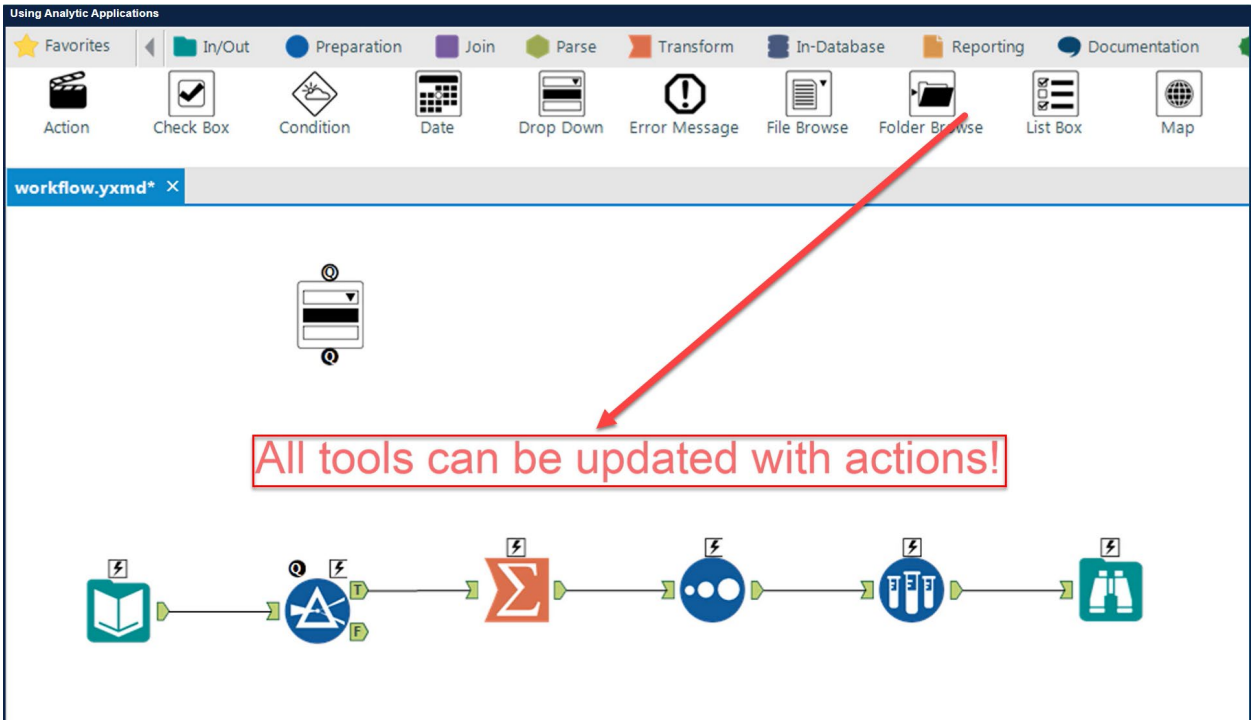
GROUPS OF DATA
MULTIPLE PROCESSES

QUESTION 3

How can you include a macro file in an existing workflow when sharing with others?

- [x] Export the workflow as a .yxzp file
- [x] Save your workflow to the Gallery with dependent assets included
- [ ] Save the workflow as a .yxdb file
- [ ] Convert your workflow to a Standard Macro type

- [Analytic Apps]



Which of the following statements are *true* regarding the sharing of analytic applications?

- [x] Analytic applications may be published and run on the Analytics Gallery, or your organization's internal Gallery.
- [ ] Once saved as an analytic application (.ywxz), the underlying workflow can not be changed.
- [x] The recipient of a .yxwz file requires access to Designer to run the app.

In which view can you *not* apply changes to the app interface to affect the user experience?

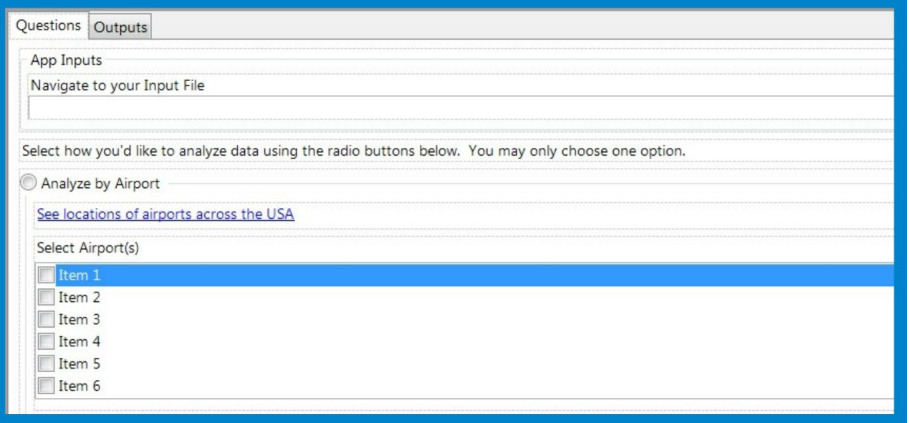
- Properties
- Test
- Tree
- Layout

Which view in the Interface Designer allows a user to enter app values and open the workflow in Debug updated with those values?

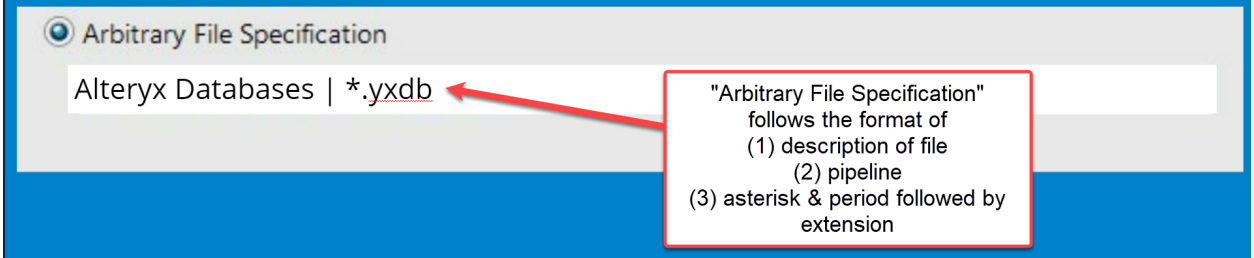
- Properties
- Tree
- Layout
- Test

Select the interface elements that have been added to the app interface in the Layout View:

- [x] Label
- [x] Group Box
- [x] Link
- [x] Tab



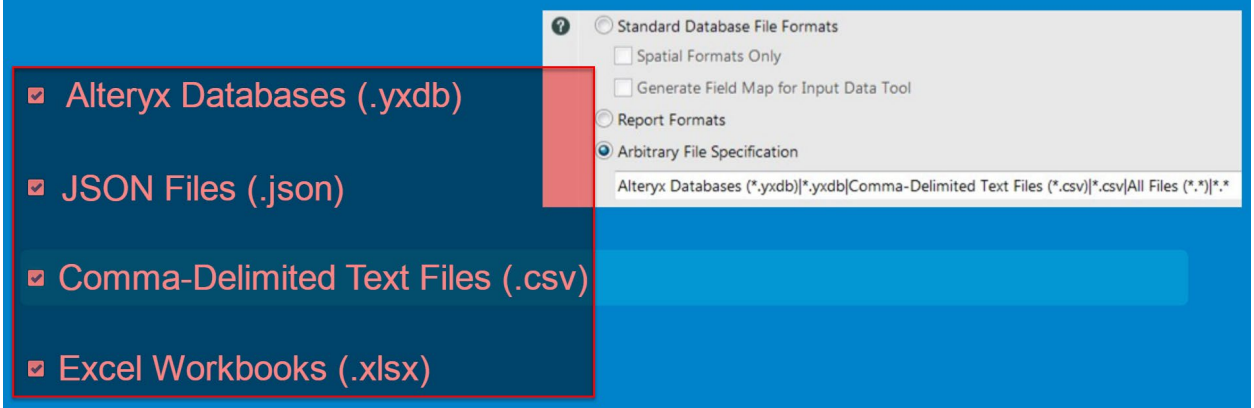
Alteryx Databases | *.yxdb



Which functionality is *not* supported with apps published to the Gallery?

- Specifying input file types with a File Browse tool
- Generating a Field Map for an Input Data tool using a File Browse tool
- Enabling the Save As dialog window in an app

Based on the File Browse tool's configuration, which types of files will a user be able to input in the app?



- [Analytic Apps]

Specific cell values can be updated with a Text Box tool when it is connected to which tool?

- Output Data
- Text Input
- Input Data
- Filter

Example of this:

True or False: If a user enters a value greater than the set maximum value, the default value will be used for workflow processing.

- True
- False

Which of the following options can be used to list values in a Drop Down tool?

- [x] Manual entry of display values
- [x] Read in display values from a file
- [x] Show values from a licensed third party data set
- [x] Use fields from an incoming data stream

Given the following result from the Debug workflow's App Wizard, which mode in the List Box was selected in the tool's configuration?

- Select Tool Mode
- Generate Custom List

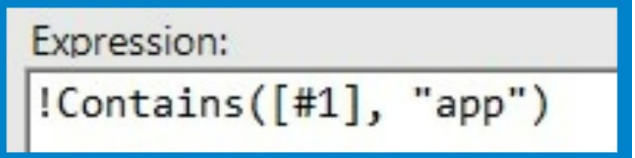
```
App Values:
<WizardValues>
<Value name="List Box (11)">"JFK","LAX","SFO"</Value>
</WizardValues>
```

Which statements regarding the List Box tool are true?

- List Boxes can accept only one selection value.
- List Boxes can only be used to update workflow tools that contain embedded Select windows.
- When generating custom lists of selected values, the Start Text, Separator and End Text can be customized.
- The List Box can be configured to display all list values as “selected” by default in the app’s interface.

Which Text Box entry would result in an error message based on the expression in the Error Message tool’s configuration?

- Happy
- Application
- Map



Select the statements that are true regarding the Error Message tool.

- Error messages can be configured in the Interface Designer.
- Error Message tools can be updated with Action tools.
- If the expression in the Error Message tool is true, the error message will be displayed.

Select the option below that correctly completes the statement for the Action type “Enable/Disable Container from Question”:

If the Radio Button is *selected*, the Tool Container will be _____.

- Disabled
- Enabled

True or False: Unless a radio button is grouped within another, only one radio button can be selected in an app interface.

- True
- False

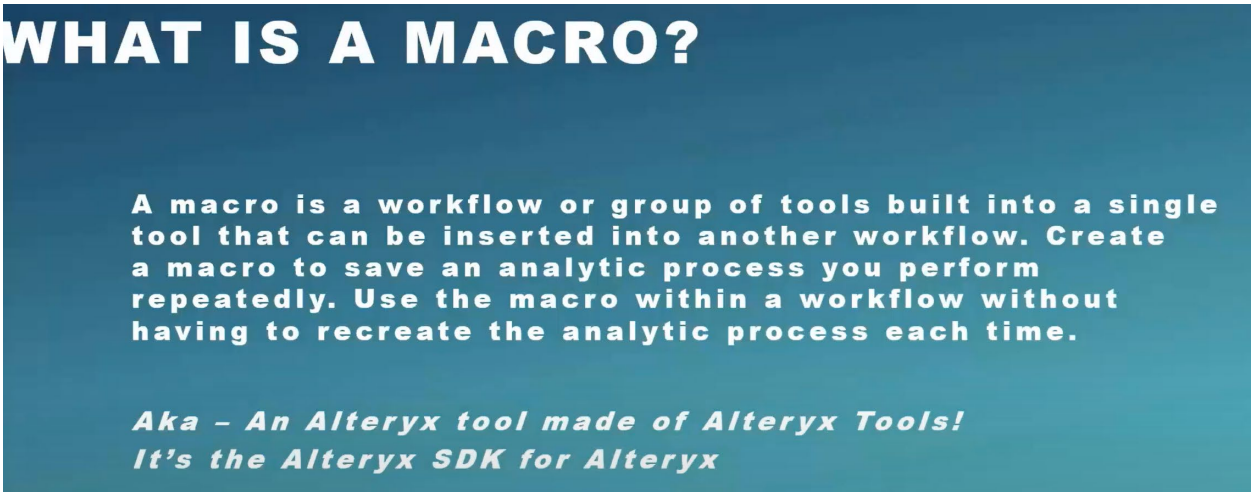
The selection options in a Drop Down are dependent on a user’s selections in a previous app. Of the options below, which is the *best* for configuring the list values of the Drop Down tool to create a dynamic experience?

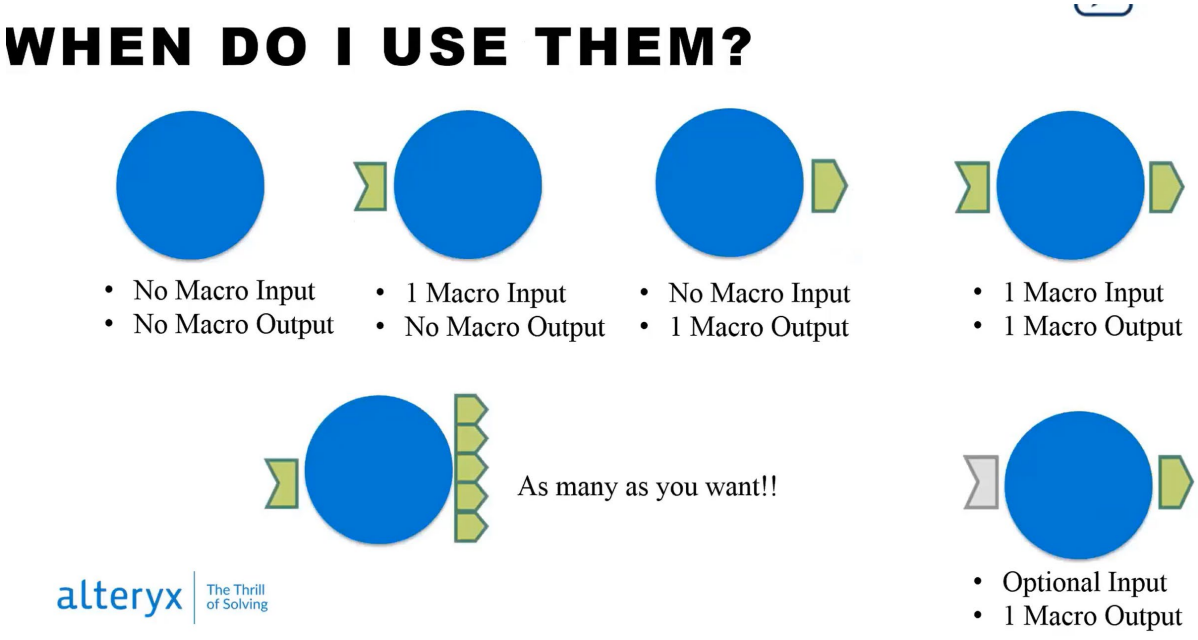
- Manually set values
- Use values from an external source
- Update value with Formula

SELECT THE STATEMENTS THAT ARE TRUE ABOUT APPS ON THE GALLERY.

A. Analytic apps can not be run on the Gallery.
B. Some interface tools are not supported for use on the Gallery
C. Any workflow dependencies need to be accessible to the end user on the server

- [Macro]





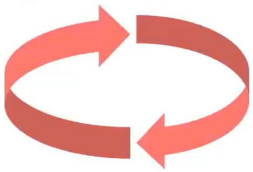
MACRO BEHAVIORS

Standard (SHARED PROCESS)

- Typical workflow
- Packaged set of tools

Iterative (DO UNTIL *Condition*)

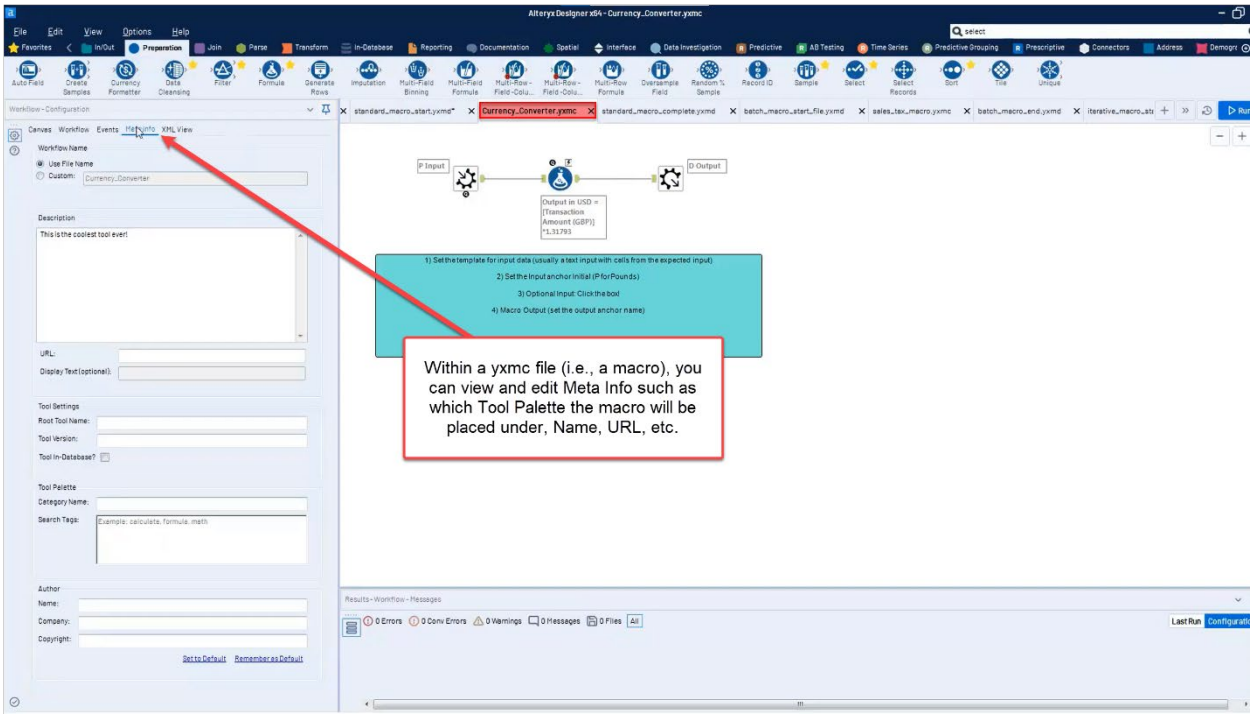
- Repeating process
- Typically ends at a threshold



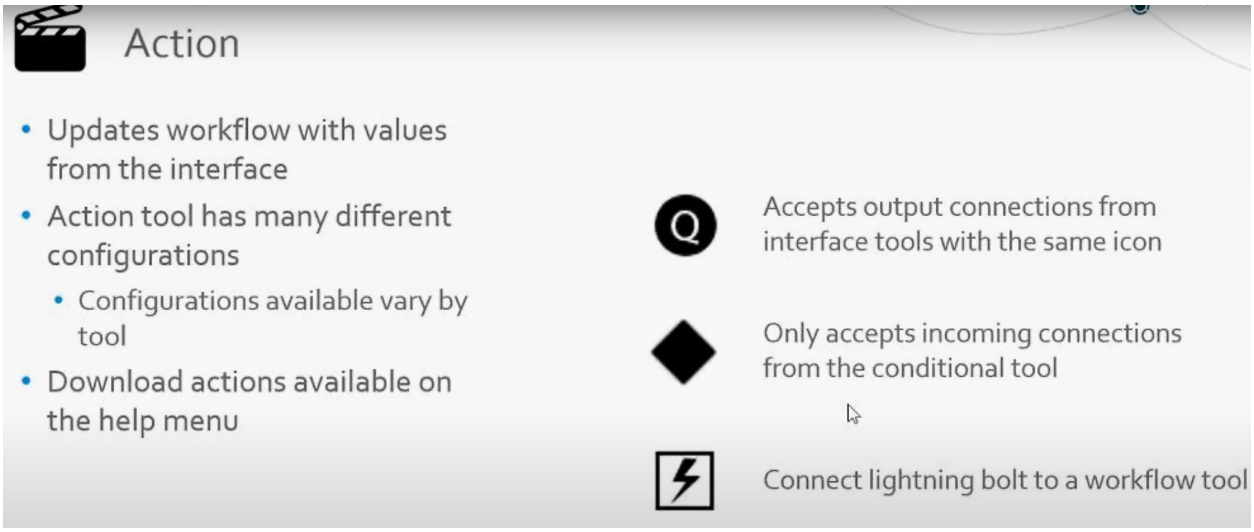
Batch (FOR EACH)

- Process Each individual record
- Process Each group of records

alteryx | of Solving



- [Analytic Apps]



- Y
- Y
- Y
- Y
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- Y
- Y

- Y
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- Y
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- Y
- Y
- Y
-

Practice Exam

https://s3-us-west-1.amazonaws.com/ayx.policies/Advanced+Certification+Exam+Prep+Guide.pdf

Practice Exam

Question 1

Practical Application Question

You are researching consumption of common food staples globally. In the provided dataset, the average yearly consumption in pounds per person of 15 foods is provided for 236 regions. There are two rows for each region, the header row provides the name of the food and the data row directly beneath it provides the quantity consumed of that food.

Determine which region consumes the lowest total quantity of **wheat, rice, beans** and **corn** per person. What is that region's total quantity consumed per person for all four items? (Note: data provided are fictitious and randomly generated)

A) 174 pounds per person

B) 181 pounds per person

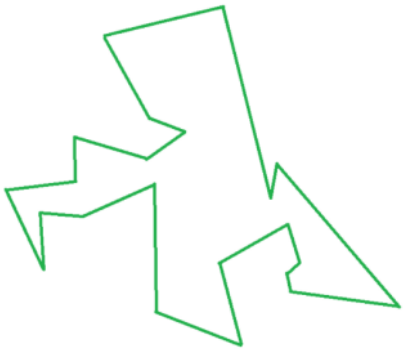
C) 196 pounds per person

D) 202 pounds per person

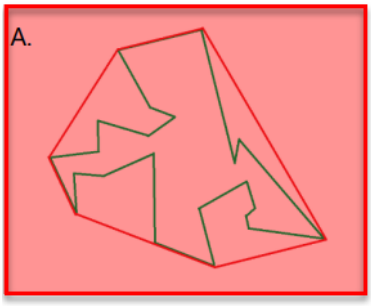
E) 203 pounds per person

Question 2

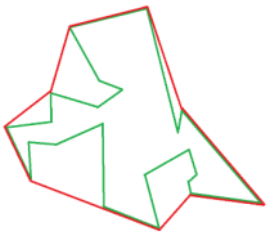
Which of the following red polygons represents the convex hull of the green polygon?



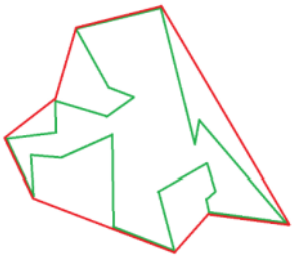
A.



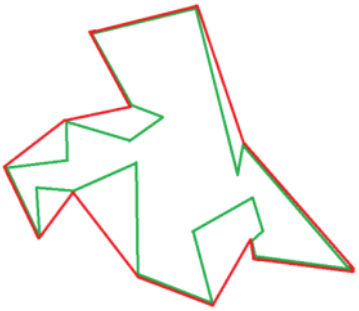
B.



C.



D.



Question 3

Which regular expression used with the Parse output method of the RegEx tool will achieve the desired result?

Before:

Date
January 1, 2016
February 14, 2016
March 22, 2016

Desired Result:

Date	Month	Day	Year
January 1, 2016	January	1	2016
February 14, 2016	February	14	2016
March 22, 2016	March	22	2016

A. (\<\w+\>)\s(\d+),\s(\d+)

B. (\<\w+\>) (\d), (\d+)

C. ([A-Z]+)(\d+)(\d+)

D. (.+)\s(.+)\s(.+)

Question 4

Which of the following can the Render tool output? Select all that apply.

A. A PowerPoint Presentation

B. An Alteryx Database file

C. A picture with a transparent background

D. Records with a line separating them

Question 5

A user is looking at the following output from the Pearson Correlation tool. The user determines that there are weak linear relationships between these variables because the p-values are too high.

Why is this conclusion incorrect?

FieldName	Att	Yds	TD	Lng
Att	1	0.981051	0.859956	0.717843
Yds	0.981051	1	0.870789	0.773585
TD	0.859956	0.870789	1	0.631569
Lng	0.717843	0.773585	0.631569	1

A. High p-values show a strong relationship

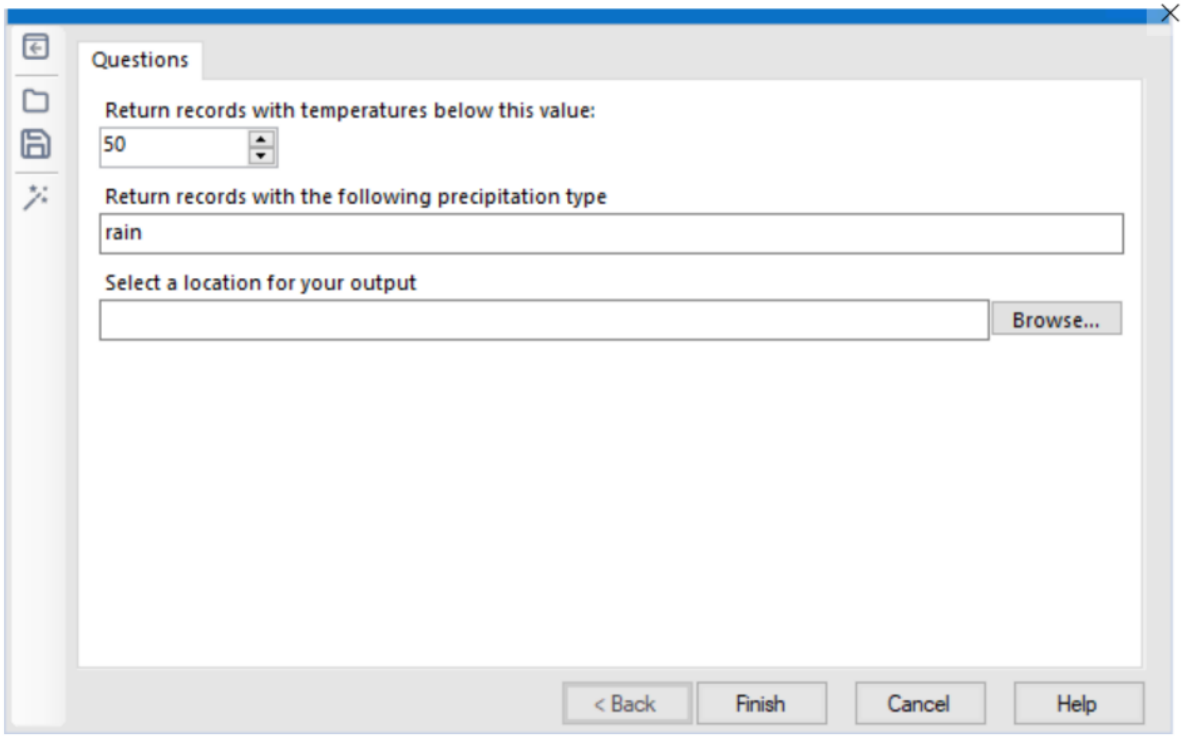
B. The Pearson Correlation tool checks the strength of non-linear relationships

C. There are too many fields included to make valid conclusions

D. The output displays correlation coefficients, not p-values

Question 6

Which of the following interface tools were used to create the Analytic Application interface shown below? Select all that apply.



A. File Browse

B. Drop Down

C. Numeric Up Down

D. List Box

E. Folder Browse

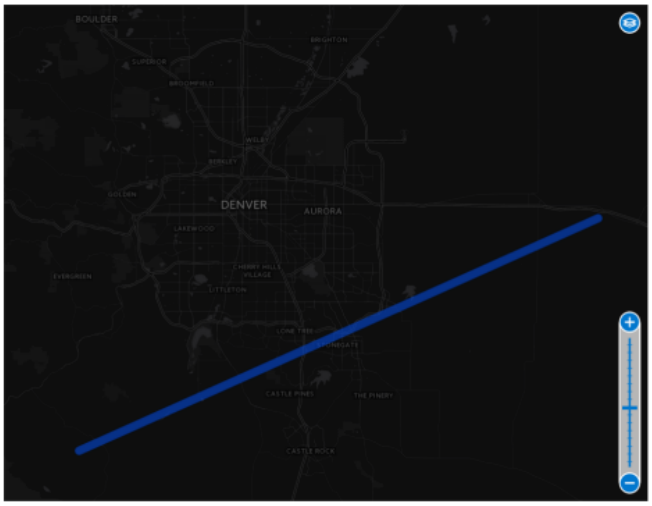
F. Text Box

QUESTION #1

What is the resulting intersection object that is created from the following objects:

Polygon:

Line:



A) A set of spatial points
B) A polygon object
C) A line object
D) An intersection between two different object types is not allowed

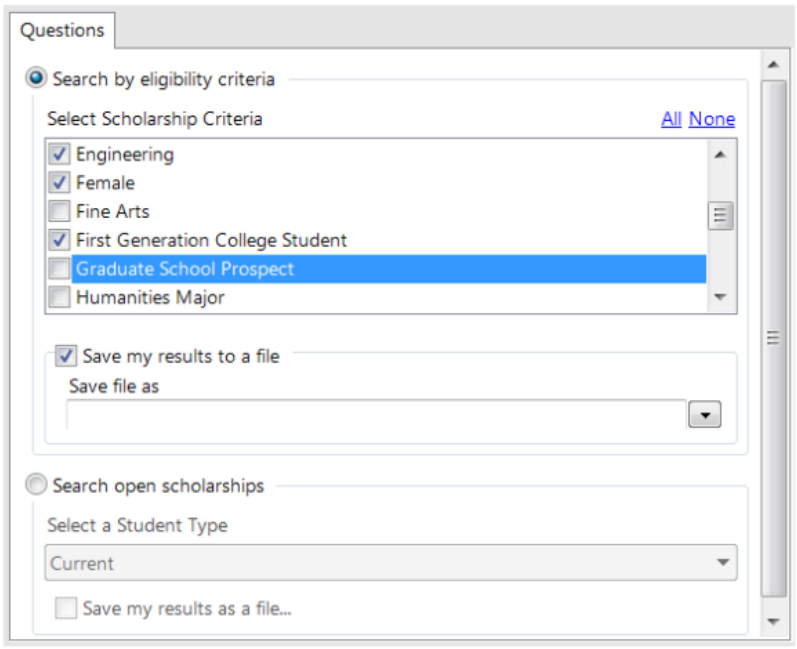
QUESTION #2

Which reporting tool has an optional input anchor?

A) Report Text
B) Report Map
C) Footer
D) Header

QUESTION #3

Which interface tools were used to create the analytic application shown below? Select all that apply.



A) Radio Button
B) List Box
C) File Browse
D) Drop Down
E) Check Box

QUESTION #4

Which regular expression used with the Parse output method of the RegEx tool will achieve the desired result?

Input:

CustomerID	Name
559	PAMELA WRIGHT
263	DENISE PENTICO
4566	DOROTHY COLE
898	STACEY BLICKER

Desired Result:

CustomerID	Name	First Name	Last Name
559	PAMELA WRIGHT	PAMELA	WRIGHT
263	DENISE PENTICO	DENISE	PENTICO
4566	DOROTHY COLE	DOROTHY	COLE
898	STACEY BLICKER	STACEY	BLICKER

A) (a-z)\s(a-z)

B) ([a-z]+)([a-z]+)

C) ([a-z]*)\t([a-z]*)

D) ([a-z]+)\s([a-z]+)

QUESTION #5

You are investigating profits (measured in thousands of dollars) at your restaurant. You get the following output from the Association Analysis tool. Given the output, which statements are correct? Select all that apply.

Spearman Correlation Analysis

Focused Analysis on Field Profit

	Association Measure	p-value	
Advertising	0.3100774	6.7283e-06	***
Average.Temperature	-0.1703829	1.5083e-02	*
Number.of.Staff	0.0093054	8.9517e-01	

Full Correlation Matrix

	Profit	Advertising	Average.Temperature	Number.of.Staff
Profit	1.0000000	0.3100774	-0.1703829	0.0093054
Advertising	0.3100774	1.0000000	0.3607518	0.7480575
Average.Temperature	-0.1703829	0.3607518	1.0000000	0.6490917
Number.of.Staff	0.0093054	0.7480575	0.6490917	1.0000000

Matrix of Corresponding p-values

	Profit	Advertising	Average.Temperature	Number.of.Staff
Profit		6.7283e-06	1.5083e-02	8.9517e-01
Advertising	6.7283e-06		1.2413e-07	0.0000e+00
Average.Temperature	1.5083e-02	1.2413e-07		0.0000e+00
Number.of.Staff	8.9517e-01	0.0000e+00	0.0000e+00	

A) There is a statistically significant linear relationship between Advertising and Profit

B) Based on the correlation matrix, as the average temperature increases by 1 degree, profit decreases by approximately $170.39

C) Number of staff is not significantly related to Profit

D) There may be a problem with multi-collinearity between Average Temperature and Advertising

QUESTION #6

Practical Application Question

You are investigating recent UFO activity in Colorado. Given the provided dataset on UFO sightings in Colorado, determine the number of reported sightings that happened within 5 miles and 10 minutes of another sighting. (Hint: Count each sighting individually. If two sightings are within the required distance and time of one another, both sightings count towards the total).

A) 34
B) 36
C) 39
D) 40
E) 43