

# Malaysia User Group

*Kuala Lumpur, Malaysia*

**Date:** 20<sup>th</sup> March 2024

**Time:** 6:00pm - 8:00pm MYT

**Venue:** PwC Malaysia Office

**Address:** PwC Malaysia - Menara TH 1 Sentral, Jalan Rakyat, Kuala Lumpur Sentral, 50706 Kuala Lumpur, Wilayah Persekutuan Kuala Lumpur

alteryx

ANALYTICS

FOR  
ALL

# AGENDA

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## Opening Remarks

By: Alteryx Team

2

## UG Leadership Structure

By: Alteryx Team

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## Tips & Tricks

By: Calvin Tang

4

## Closing + Networking

Open to all

### User Group (UG) Notes

- The UG Slides will be shared post-event.
- Photos of the UG will be taken and posted on the UG site and on social media.
- The spirit of the UG is to share, learn, and network amongst peers. Please uphold that creed.

# OPENING REMARKS

# MY UG LEADERSHIP

# TIPS & TRICKS

# CHOOSING THE RIGHT TOOL

*Knowing how to use it is important, but knowing what to use it for is more important*

## ENABLERS

Tools that help you when using other tools.



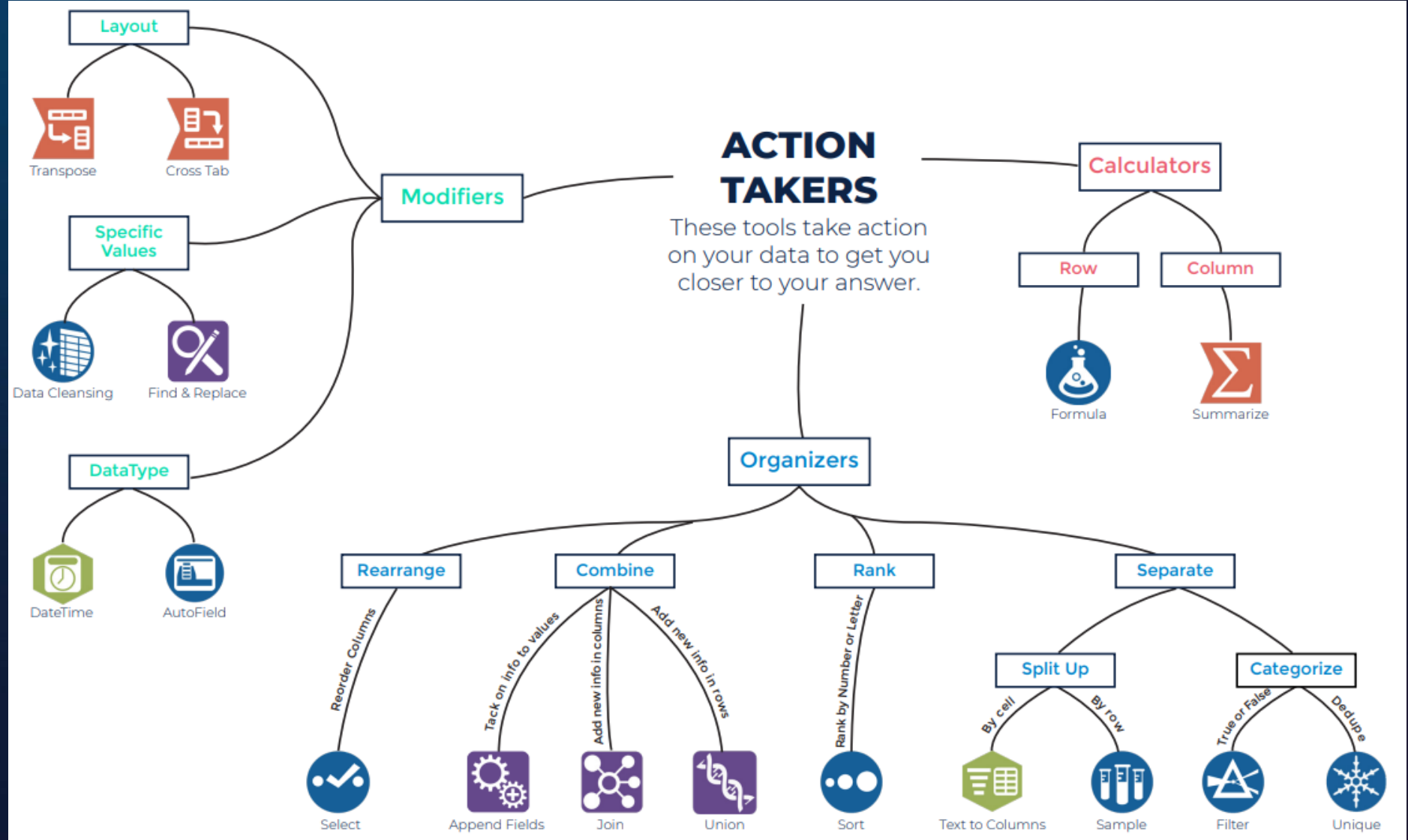
Browse



Input Data



Output Data



# ALTERYX TOOL CHEATSHEET

*You will need to combine tools to achieve certain actions*

## ACTIONS YOU MAY WANT TO TAKE...

Change Datatype

Row to Column

Column to row

Split one cell into multiple cells

Combine lists by adding rows

Combine lists by adding columns

Group Information

Rank Data

Get rid of columns

Get rid of empty values

Get rid of rows

Get rid of punctuation or whitespace

## TOOLS THAT CAN DO THAT IN DESIGNER

Select  Formula  Autofield 

Transpose 

Cross Tab 


Text to Column  Formula 

Union 

Join  Find & Replace  Append Fields 


Union  Find & Replace  Summarize 

Sort  Summarize 

Select 

Formula  Filter 

Formula  Filter  Sample 

Data Cleansing 

Perform a calculation

Work with dates

Find a value (unique, min, max)

Identify records with a unique ID

Replace a value

Input Data

Rename Fields

Reorder Fields

View Results

Output Results

Summarize  Formula 

DateTime  Formula 

Summarize  Unique  Find & Replace 

Record ID 

Find & Replace  Formula 

Input Data 

Select 

Select 

Browse 

Output Data 

# ALTERYX FUNCTIONS & TERMINOLOGY CHEATSHEET

Know the terms to use Alteryx like a pro!

## FUNCTIONS

When using functions in Designer, keep in mind that datatype is very important. The table on the right shows the function category and an X indicates that functions in that category are compatible with that column's corresponding datatype. This is not an exhaustive list. Rather, use this table to match your data's type and find a category that is compatible with that datatype to ensure the function will work. Note that you may need to change your data's datatype if you wish to use it with a particular function.

	String	Numeric	Date/Time	Boolean	Spatial
Conditional	X	X	X	X	X
Conversion	X	X			
Date/Time	X		X		
File	X				
Finance		X			
Math		X			
Math: Bitwise		X			
Min/Max		X			
Operators	X	X	X	X	X
Spatial		X			X
Specialized	X	X	X	X	X
String	X				
Test	X	X	X	X	X

## TERMINOLOGY

**Blend** - merging data from different sources into one dataset, such as data from different spreadsheets, databases, or other sources into one complete dataset.

**Concatenate** - joining one or more text strings together.

**Datatype** - an attribute of data which lets the computer know how to interpret that value. There are 5 main datatypes in Designer (string, numeric, Date/Time, Boolean, Spatial). Datatypes can be changed for particular values.

**Delimiter** - a sequence of one or more characters that creates a boundary between values. Common delimiters include commas, pipes, and quotes.

**Filter** - filtering separates your data into two streams: True containing the data met your criteria, and False containing the data that did not meet your criteria.

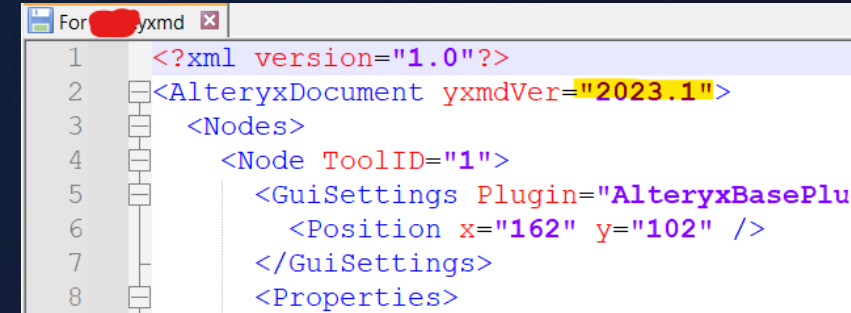
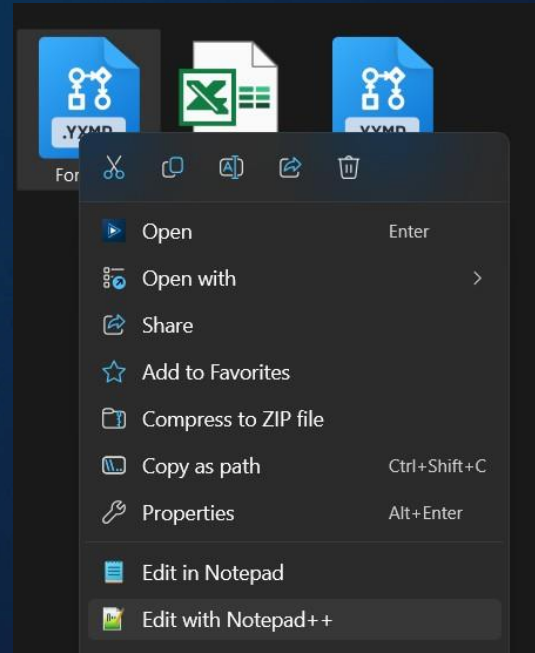
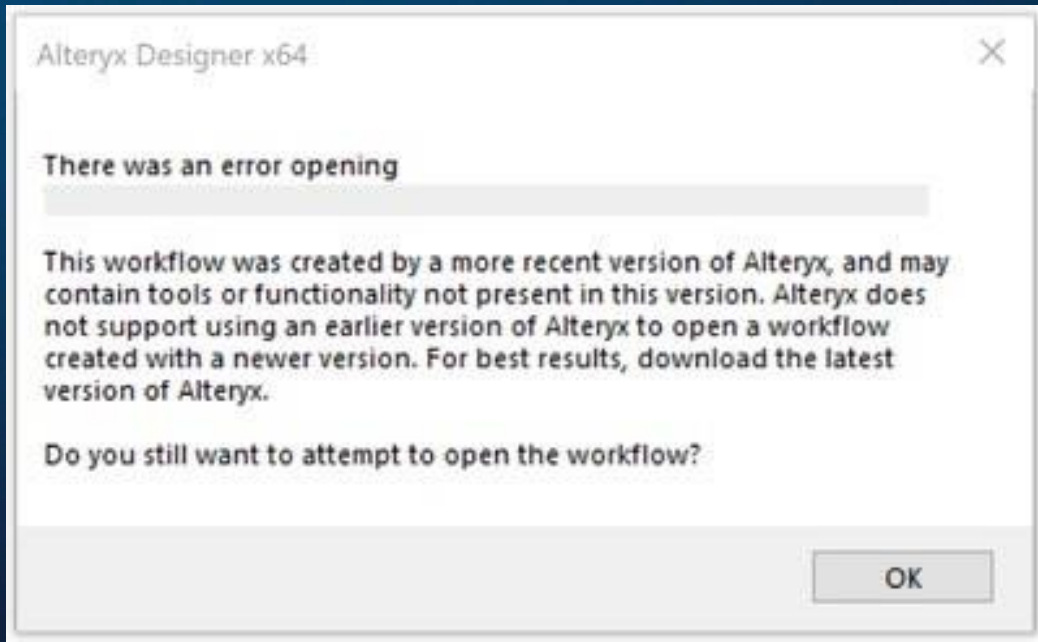
**Flag** - flagging data is a technique used to categorize data. This is usually accomplished with a conditional statement which checks values against a set of criteria and creates a corresponding flag in another column.

**Parse** - parsing separates values based on delimiters. Examples include: separating keywords from phrases, separating numbers from letters, or area codes from phone numbers.

**Sort** - ranking items in ascending or descending order.



# VERSION ERROR HANDLING



## Alteryx Version Differences

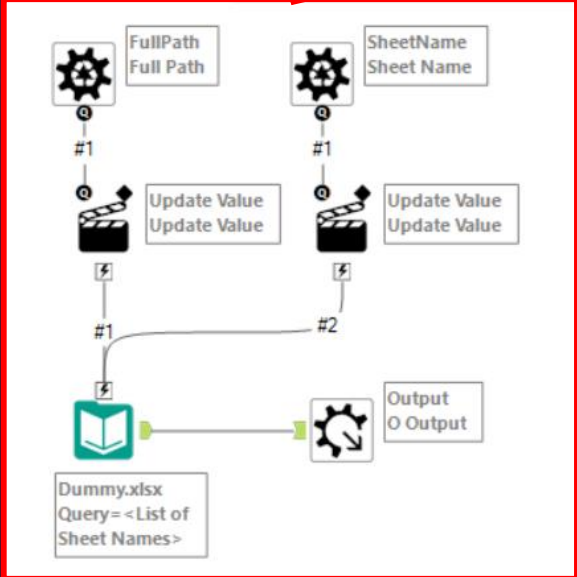
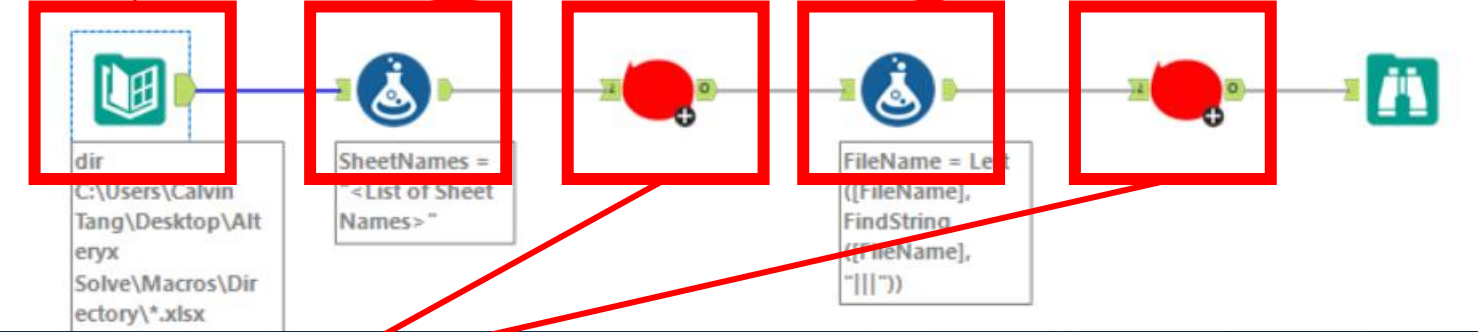
- Change the version of the workflow/macro/app using Notepad or Notepad++ and save it.
- Ensure that the version gap is not too big, and ensure your tools are backward compatible. E.g: Control Containers are only in v2023.1 onwards.
- Once changed, it should work for the receiving party.

# GETTING LIST OF SHEET NAMES FROM DIRECTORY

Get directory as usual

Write an expression as "`<List of Sheet Names>`"

Get the FileName without the ||| items after



Use a dummy input and configure the action tool to update the following:

- Replace a specific string:  
C:\Users\Calvin Tang\Desktop\Alteryx Solve\Macros\Dummy\Dummy.xlsx
- Replace a specific string:  
<List of Sheet Names>










Record	Sheet Names	FileName
1	Sheet1	C:\Users\Calvin Tang\Desktop\Alteryx Solve\Macr...
2	Sheet1	C:\Users\Calvin Tang\Desktop\Alteryx Solve\Macr...
3	Sheet1	C:\Users\Calvin Tang\Desktop\Alteryx Solve\Macr...
4	Sheet1	C:\Users\Calvin Tang\Desktop\Alteryx Solve\Macr...
5	Sheet3	C:\Users\Calvin Tang\Desktop\Alteryx Solve\Macr...

THANK YOU

# APPENDIX




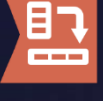


# Appendix A: Core Concepts

## Data Parse, Blend and Transform in Excel vs Alteryx

Task	Excel	Alteryx	Alteryx Tool
Update data types, rename columns, remove columns, and change column order.	Format cells or change syntax, rename column headers, delete columns or select and shift to move columns.	Use the <b>Select Tool</b> to easily change data types, rename fields, remove fields or re-order fields	
Change data types	Format cells using the format cells menu or change syntax	Use the <b>Auto Field Tool</b> to automatically update the data types of your fields to match the values contained in the field	
Remove Rows	Manually select the rows you'd like to delete or use a quick filter to remove what you don't need	Use the <b>Filter Tool</b> to create simple or complex filters on your data rows.	
Sort	Highlight the columns and do a regular or custom sort.	Use the <b>Sort Tool</b> to sort your data	
Formulas	Write formula in cell and drag down to carry formula into more cells	Use the <b>Formula Tool</b> to create new fields or update existing fields with a wide variety of formulas	
Formulas containing multiple rows of data i.e. Cumulative Sum	Enter value into first cell then create formula using the starting point and additional rows of data. Drag formula to applicable rows.	Use the <b>Multi Row Formula Tool</b> to utilize more than one row of data in your formulas.	
Apply formula to multiple columns of data i.e. Calculate the % each field makes of the whole	Create a table of your data and pivot on the data	Use the <b>Multi Field Formula Tool</b> to execute a single function on multiple fields	

# Appendix A: Core Concepts (continued)

## Data Parse, Blend and Transform in Excel vs Alteryx

Task	Excel	Alteryx	Alteryx Tool
Parse data	Select columns and use the Text to Columns Wizard	Use the <b>Text to Columns Tool</b> to split a field with a regular format, such as, a csv.	
Join two tables with a common field	Use VLOOKUP formula or wizard	Use the <b>Join Tool</b> to join two tables with a common field.	
Append Rows	Copy and paste contents of table so fields align appropriately	Use the <b>Union Tool</b> to combine multiple worksheets based on the field names or maintaining the position of each column.	
Pivot Table (Rows to Columns)	Build a pivot table and mold data to desired shape	Use the <b>Cross Tab Tool</b> to pivot the orientation of the data table so vertical data fields can be viewed on a horizontal axis summarizing data where specified.	
Pivot Table (Columns to Rows)	Build a pivot table and mold data to desired shape	Use the <b>Transpose Tool</b> to pivot the orientation of the data table. It transforms the data so you may view Horizontal data fields on a vertical axis.	
Aggregate and Sum data	Write a sum formula or use the auto-sum symbol	Use the <b>Summarize Tool</b> to aggregate data perform operations, like sum or count, on numeric fields.	

# APPENDIX B: DATA TYPES 1

## Strings

More memory intensive

Type	Description	Simplified	Example
String	Fixed Length Latin-1 String. The length should be at least as large as the longest string you want to be contained in the field, or values are truncated. Limited to 8,192 Latin-1 characters.	Fixed String	Any string whose length does not vary much from value to value, and only contains simple Latin-1 characters.  <b>E.G:</b> House; Dog; Partner; Hello <b>Cannot read:</b> Монгол Улс, 香港
Wstring	Wide String accepts any character (Unicode.) Limited to 8,192 characters.	Variable String which is memory optimized	Any string whose length does not vary much from value to value and contains any character.  <b>E.G:</b> Hi, I have a house in Монгол Улс & 香港
V_String	Variable Length. The length of the field adjusts to accommodate the entire string within the field.	Fixed String which allows Unicode	Any string whose length varies from value to value, and only contains simple Latin-1 characters.  <b>E.G:</b> Hi, I have a house in Hong Kong <b>Cannot read:</b> Монгол Улс, 香港
V_WString	Variable Length Wide String. The length of the field adjusts to accommodate the entire string within the field and will accept any character.	Variable String which is memory optimized which allows Unicode	Any string whose length varies from value to value and contains any character.  <b>E.G:</b> Hi, I have a house in Монгол Улс & 香港

# APPENDIX B: DATA TYPES 2

## Numerical Data

Type	Description	Example
Byte	A unit of data that is 8 binary digits (bits) long. A byte field is a positive whole number that falls within the range 0 thru 255, or $2^8$	0, 1, 2, 3...253, 254, 255
Int16	A numeric value without a decimal equal to 2 bytes, or $-(2^{15})$ to $(2^{15})-1$	-32,768 to 32,767
Int32	A numeric value without a decimal equal to 4 bytes, or $-(2^{31})$ to $(2^{31})-1$	-2,147,483,648 to 2,147,483,647
Int64	A numeric value without a decimal equal to 8 bytes, or $-(2^{63})$ to $(2^{63})-1$	A numeric value without a decimal equal to 8 bytes, or $-(2^{63})$ to $(2^{63})-1$
Fixed Decimal	A numeric value with a decimal.  The length (precision) of a fixed decimal is equal to the width of the integer (left side of decimal) plus the decimal point plus the width of the scale (right side of decimal). If a number is negative, the negative sign is also included in the length. Alteryx defaults a Fixed Decimal to 19.6. The maximum precision is 50, inclusive of the decimal point and negative sign (if applicable). A Fixed Decimal is the only numeric data type with an adjustable length.	A value of 1234.567 with a length of 7.2 results in 1234.57
Float	A standard single-precision floating-point value. It uses 4 bytes & can represent values from +/- $3.4 \times 10^{-38}$ to $3.4 \times 10^{38}$ with 7 digits of precision.  A float uses a decimal that can be placed in any position & is mainly used to save memory in large arrays of floating-point numbers.	+/- $3.4 \times 10^{-38}$ to $3.4 \times 10^{38}$ with 7 digits precision
Double	A standard double-precision floating-point value. It uses 8 bytes & can represent values from +/- $1.7 \times 10^{-308}$ to $1.7 \times 10^{308}$ with 15 digits precision.  A double uses a decimal that can be placed in any position. A double uses twice as many bits as a float & is generally used as the default data type for decimal values.	+/- $1.7 \times 10^{-308}$ to $1.7 \times 10^{308}$ with 15 digits



# APPENDIX B: DATA TYPES 3

## Date & Time Data + Boolean Data + Spatial Objects

Type	Description	Example
Date	A 10-character String in "yyyy-mm-dd" format.	December 2, 2005 = 2005-12-02
Time	Default is an 8-character String in "HH:MM:SS" format. Specify additional precision up to 18 digits, for a max of 27 characters, including the decimal separator.	2:47 and 53 seconds a.m. = 02:47:53 2:47 and 53.236 seconds p.m. = 14:47:53.236
DateTime	Default is a 19-character String in "yyyy-mm-dd HH:MM:SS" format. Specify additional precision up to 18 digits, for a max of 38 characters, including the decimal separator.	2011-05-15 07:20:33 2005-12-02 14:47:53.123456

Type	Description	Example
Bool	An expression with only two possible values: True or False.	The words 'True' and 'False' display in the results where 'False' = 0 & 'True' = non-zero.

Type	Description	Example
SpatialObj	The spatial object associated with a data record. A table can contain multiple spatial object fields.	A spatial object can consist of a point, line, polyline, or polygon.

# APPENDIX C: DATETIME FUNCTIONS

## Useful tips & tricks for datetime data

Convert a datetime to a string	
<b>Functions</b> DateTimeFormat(dt, f, l)	<b>Result</b> Returns a string representation of a datetime field based on the input of parameter f and l (l is optional).
Convert a string to a datetime	
<b>Functions</b> DateTimeParse(dt, f, l)	<b>Result</b> The function parameters f (format) and l (language, optional) have to match the incoming string field to be converted.
Convert a string (in ISO) or number to a datetime	
<b>Functions</b> 1. ToDate(x)  2. ToDateTime(x)	<b>Result</b> Date or datetime, incoming date-time should be in YYYY-MM-DD hh:mm:ss (hours optional).  Date or datetime, incoming date-time should be in YYYY-MM-DD hh:mm:ss (hours optional).
Return the difference between two datetime values	
<b>Functions</b> DateTimeDiff(dt1, dt2, u)	<b>Result</b> Difference between two datetime values, truncated (not rounded), where u is the datetime unit (e.g. years or minutes).
Want to change the datetime to another date or time	
<b>Functions</b> 1. DateTimeAdd(dt, i, u)  2. DateTimeTrim(dt, t)	<b>Result</b> New datetime based on -(i)/+(i) and u. e.g. a datetime 10 days from now DateTimeAdd(DateTimeNow(), 10, "days").  Standardizes date based on t.
Return a number or count from a datetime	
<b>Functions</b> 1. DateTimeSeconds(dt) 2. DateTimeMinutes(dt) 3. DateTimeHour(dt) 4. DateTimeDay(dt) 5. DateTimeMonth(dt) 6. DateTimeYear(dt)	<b>Result</b> Number of seconds Number of minutes Number of hours Number of day in month Number of month in year Number of year
Generate the current datetime	
<b>Functions</b> 1. DateTimeNow() 2. DateTimeToday() 3. DateTimeStart() 4. DateTimeFirstOfMonth() 5. DateTimeLastOfMonth()	<b>Result</b> Current system datetime Today's date (no time) Datetime workflow started running Datetime first of month midnight Datetime last of month 1 second before day end

### PARAMETERS

#### dt =

- [Field] (in datetime/date)
- Specified value between " ", e.g. "2017-03-24 T1:43:23" (can also be a date)
- Another function that represents a datetime.

#### f =

- Is either the format of the incoming string (for DateTimeParse) or the outgoing string (for DateTimeFormat). f is always specified by at least one specifier and most likely separators.

#### l =

- Optional parameter to set the language for DateTimeFormat and DateTimeParse. Language is mostly relevant for users that have names in a certain language (for incoming string fields, Parse) or want names in a certain language (outgoing string fields, Format).

#### x =

- [Field] (in datetime/date OR string OR number (as in number of days since 01-01-1900))
- Specified value between " ", e.g. "2017-03-24 T1:43:23" (can also be a date)
- Another function that represents a datetime

#### i =

- Positive or negative integer (no fractions!)

#### u =

- Between quotes " ": years, months, days, hours, minutes or seconds

#### t =

- between quotes " ":
  - firstofmonth (midnight)
  - lastofmonth (59:59)
  - year (first of January midnight)
  - month (first day of the month midnight)
  - day (sets time to zero but keeps date-time format)
  - hour (sets to zero minutes/seconds)
  - minute (sets to zero seconds)

### Specifier

%a or %A

%b or %B

%c or %C

%d or %D

%e

%h or %H

%I

%j

%k or %l

%M

%m

%p or %P

%S

%T

%u or %U

%w or %W

%x or %X

%y or %Y

%z or %Z

### Output from DateTimeFormat / DateTimeParse

Abbreviated weekday name ("Mon") **OR** Full weekday name ("Monday")

Abbreviated month name ("Sep") **OR** Full month name ("September")

The date and time for the computer's locale **OR** The century number ("20") / **NA**

Day of the month ("01") **OR** Equivalent to %m/%d/%y

Day of the month, leading 0 replaced by a space (" 1")

Same as %b ("Sep") **OR** Hour in 24-hour clock, 00 to 23

Hour in 12-hour clock, 01 to 12 / **NA**

The day of the year, from 001 to 365 (or 366 in leap years)

24 hours, leading zero is space, " 0" to "23" **OR** 12 hours, leading zero is space, " 1" to "12"

Minutes, 00 to 59

Month number, 01 to 12

"AM" or "PM" **OR** "am" or "pm"

Seconds, 00 to 59

Time in twenty-four-hour notation. Equivalent to %H:%M:%S / **NA**

Day of week as a decimal, 1 to 7, with Monday as 1 **OR** This returns the week number, as 00 – 53, with the beginning of weeks as Sunday. / **NA**

Day of week as a number, 0 to 6, with Sunday as 0 **OR** This returns the week number, as 00 – 53, with the beginning of weeks as Monday. / **NA**

The date for the computer's locale **OR** The 12-hour clock time, including AM or PM ("11:51:02 AM") / **NA**

Last two digits of the year ("16") **OR** All four digits of the year ("2016")

Offset from UTC time ("-600") **OR** Full time zone name ("Mountain Daylight Time") / **NA**