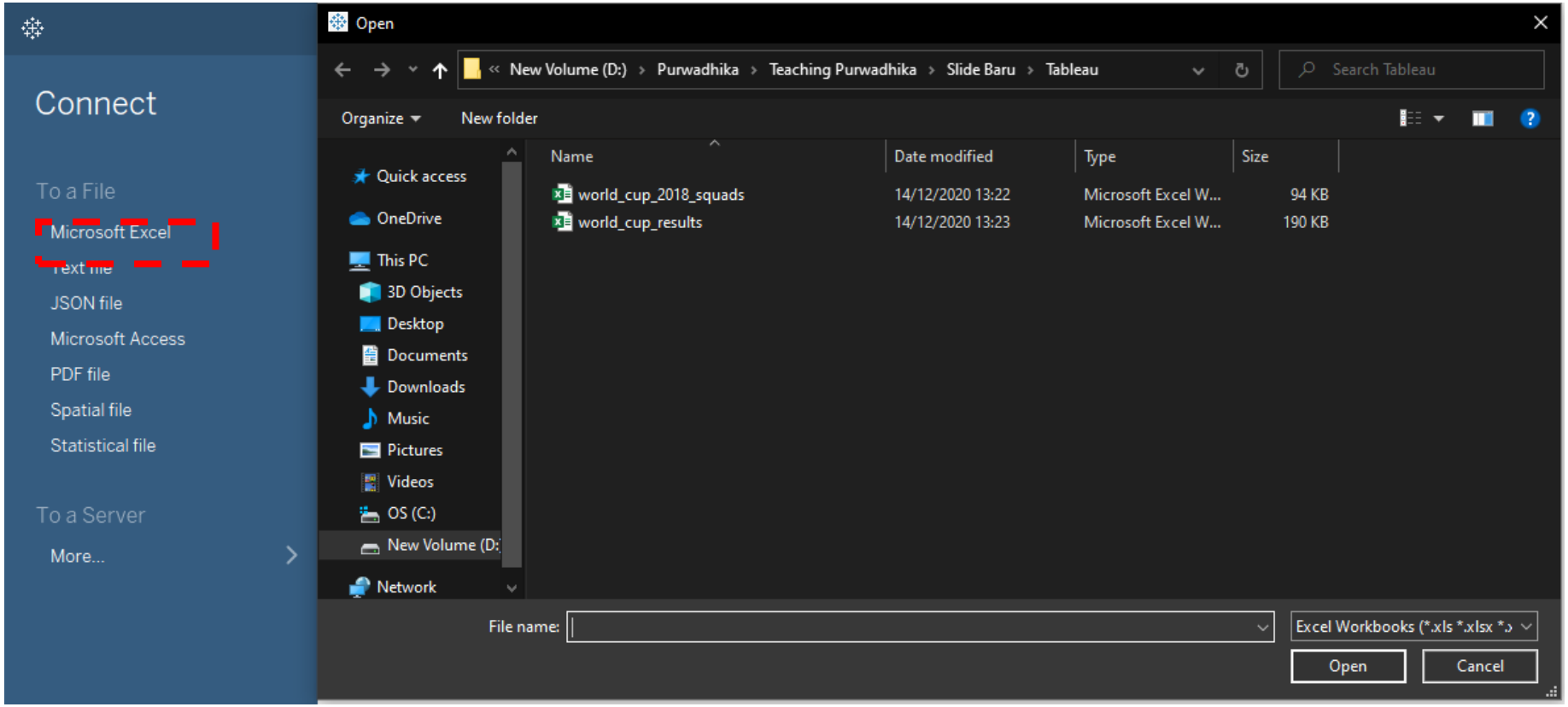
Session 6

tableau

Tableau

Data Science Program

Input Dataset



- Input your dataset, many files could be import to tableau (ex. Excel File, Json File, etc)

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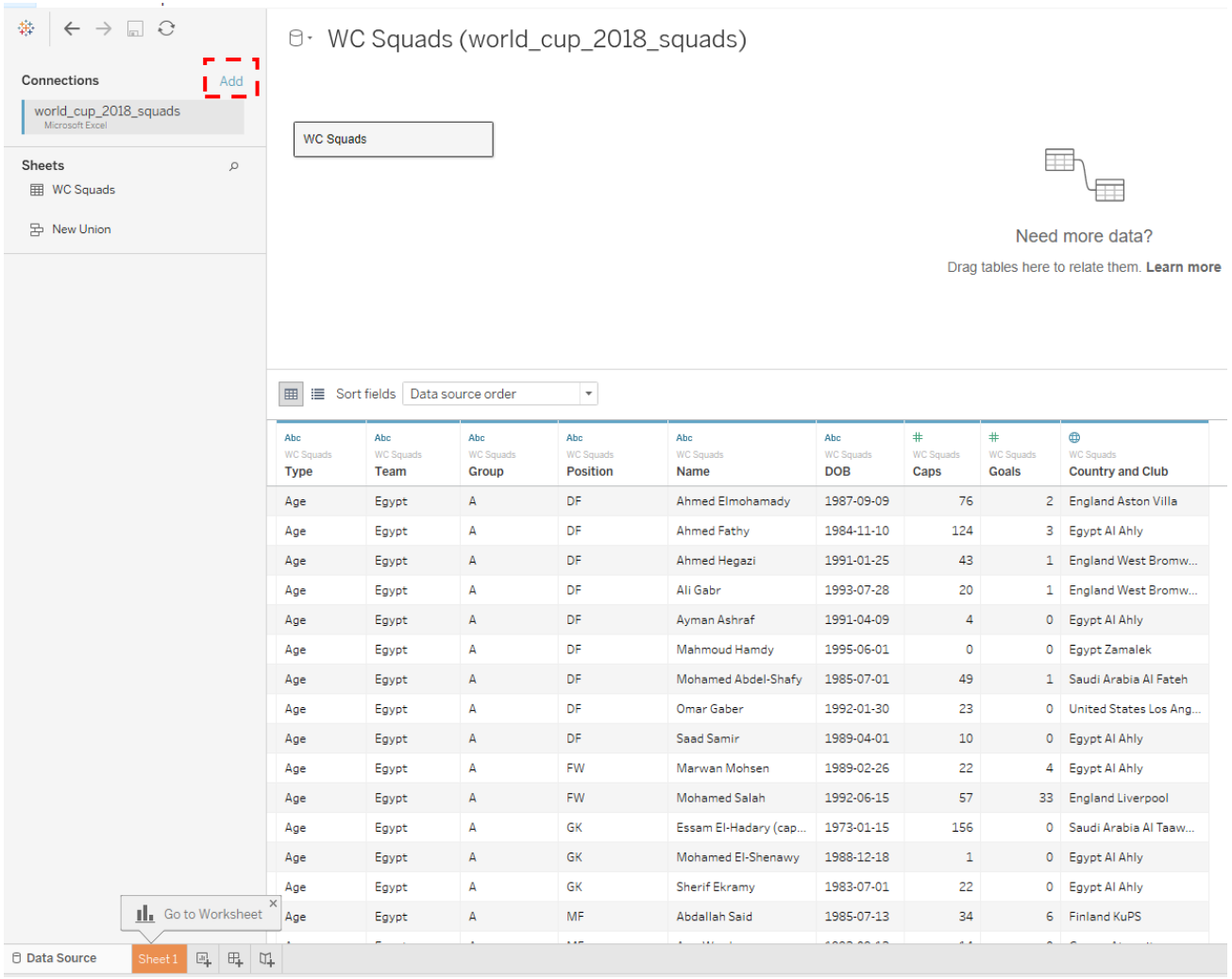
Add More Dataset



Type	Team	Group	Position	Name	DOB	Caps	Goals	Country and Club
Age	Egypt	A	DF	Ahmed Elmohamady	1987-09-09	76	2	England Aston Villa
Age	Egypt	A	DF	Ahmed Fathy	1984-11-10	124	3	Egypt Al Ahly
Age	Egypt	A	DF	Ahmed Hegazi	1991-01-25	43	1	England West Bromw...
Age	Egypt	A	DF	Ali Gabr	1993-07-28	20	1	England West Bromw...
Age	Egypt	A	DF	Ayman Ashraf	1991-04-09	4	0	Egypt Al Ahly
Age	Egypt	A	DF	Mahmoud Hamdy	1995-06-01	0	0	Egypt Zamalek
Age	Egypt	A	DF	Mohamed Abdel-Shafy	1985-07-01	49	1	Saudi Arabia Al Fateh
Age	Egypt	A	DF	Omar Gaber	1992-01-30	23	0	United States Los Ang...
Age	Egypt	A	DF	Saad Samir	1989-04-01	10	0	Egypt Al Ahly
Age	Egypt	A	FW	Marwan Mohsen	1989-02-26	22	4	Egypt Al Ahly
Age	Egypt	A	FW	Mohamed Salah	1992-06-15	57	33	England Liverpool
Age	Egypt	A	GK	Essam El-Hadary (cap...	1973-01-15	156	0	Saudi Arabia Al Taaw...
Age	Egypt	A	GK	Mohamed El-Shenawy	1988-12-18	1	0	Egypt Al Ahly
Age	Egypt	A	GK	Sherif Ekramy	1983-07-01	22	0	Egypt Al Ahly
Age	Egypt	A	MF	Abdallah Said	1985-07-13	34	6	Finland KuPS

- You can add any table what you want
- Click add and direct to your file

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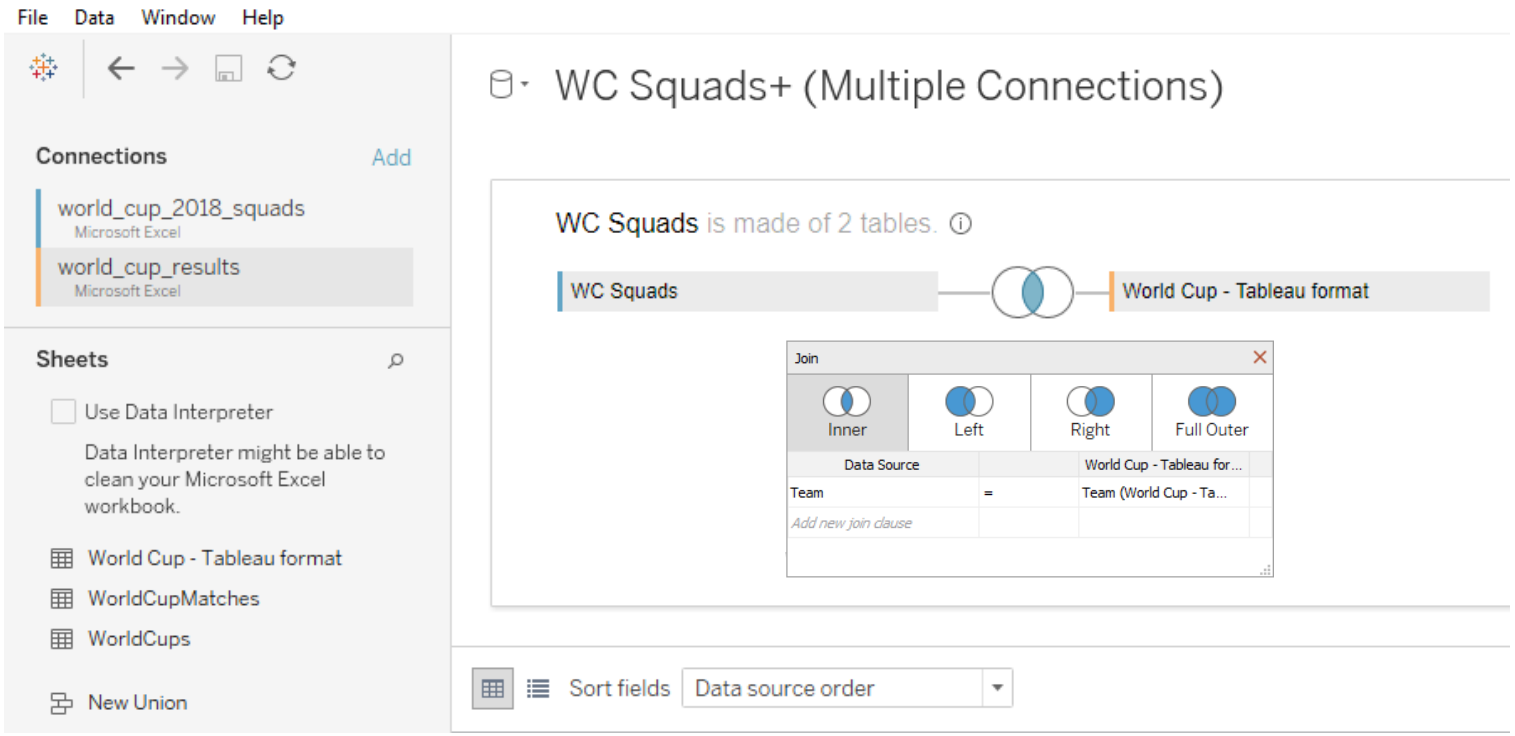
Data Joins



- Joining data in tableau just drop the table what you want to join with another table.
- Type of join in tableau (Inner, Left, Right and Full Outer)

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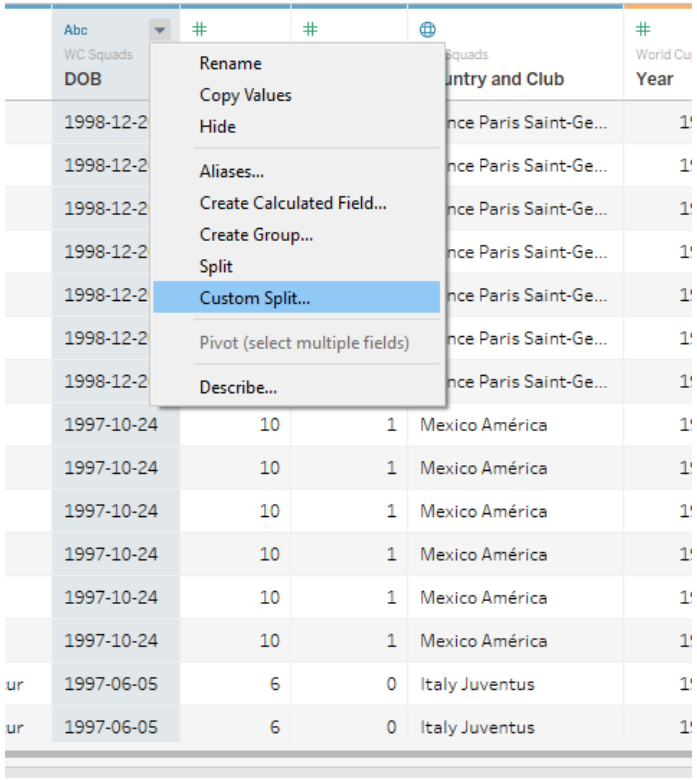
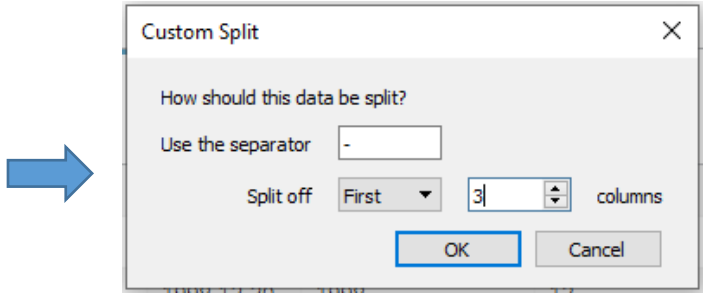
Custom Split



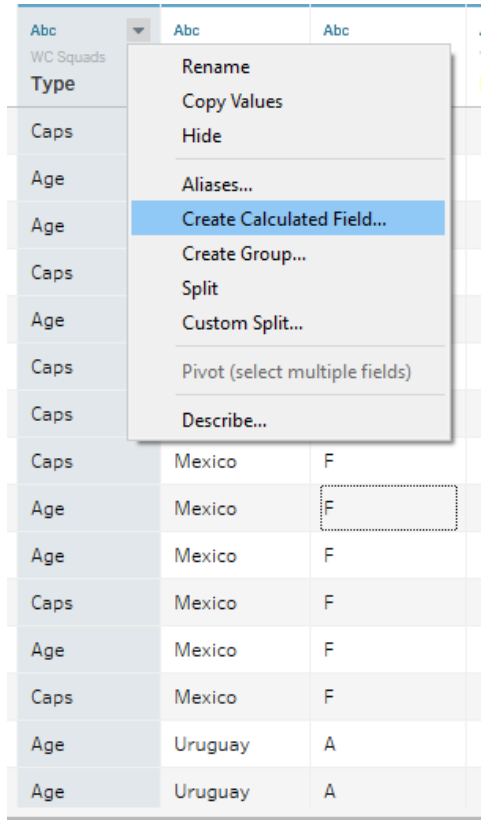


Abc WC Squads DOB	=Abc Calculation DOB - Split 1	=Abc Calculation DOB - Split 2	=Abc Calculation DOB - Split 3
1998-12-20	1998	12	20
1998-12-20	1998	12	20
1998-12-20	1998	12	20
1998-12-20	1998	12	20
1998-12-20	1998	12	20
1998-12-20	1998	12	20
1998-12-20	1998	12	20
1997-10-24	1997	10	24
1997-10-24	1997	10	24
1997-10-24	1997	10	24
1997-10-24	1997	10	24
1997-10-24	1997	10	24
1997-10-24	1997	10	24
1997-06-05	1997	06	05
1997-06-05	1997	06	05

- With custom split you can breakdown columns **DOB** to 3 parts, years, month and date.

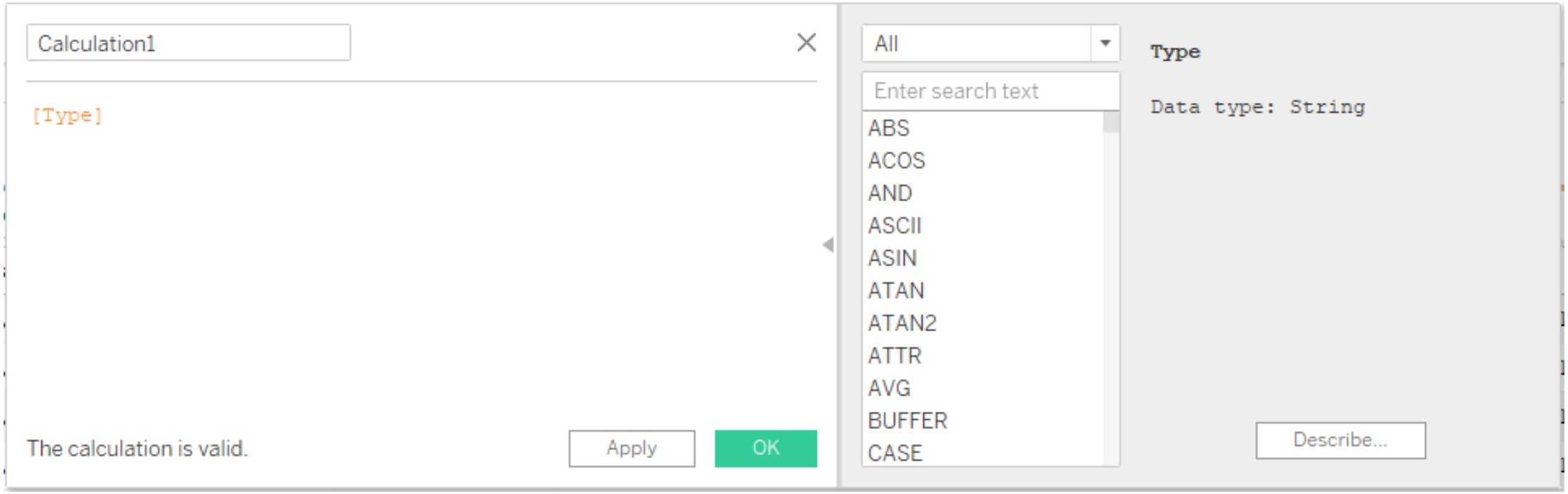
Data Calculation

- Tableau support the data calculation with similar syntax SQL or Excel
- The calculation function is useful to manipulate the data in order to get better insight
- Types of operator supported at Tableau are :
  - General Operators
  - Arithmetic Operators
  - Relational Operators
  - Logical Operators
- Different Categories of function at Tableau are :
  - Number Functions
  - String Functions
  - Date Functions
  - Logical Functions
  - Aggregate Functions



Data Calculation

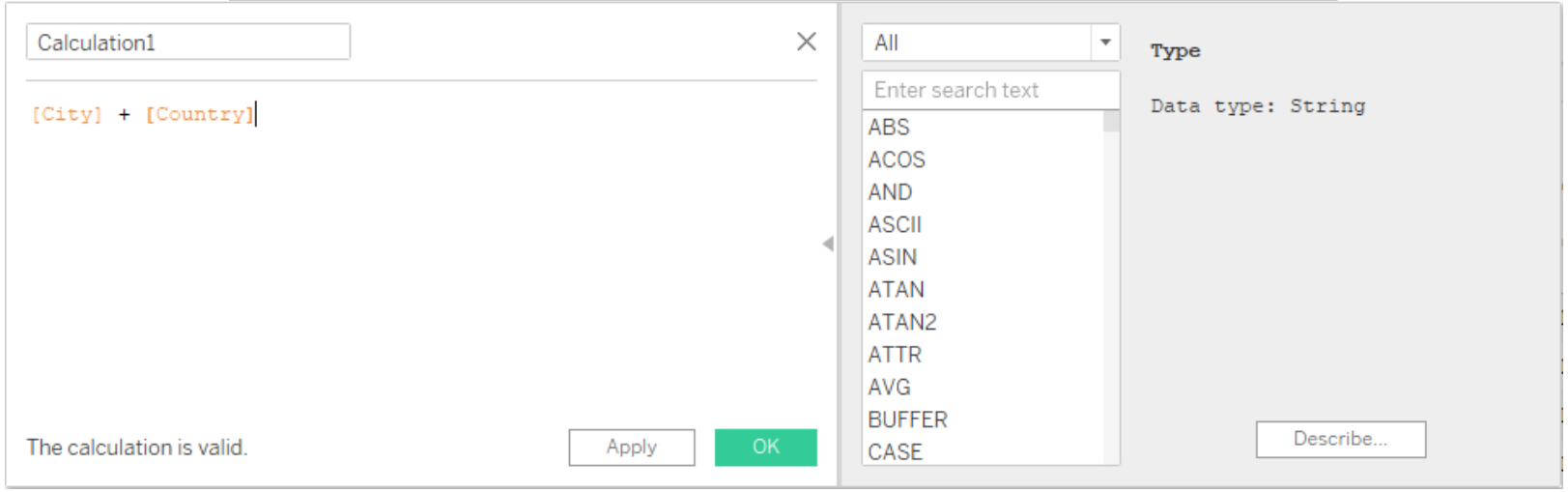
- The calculation field should be shown up like this. If the calculation opened from the column, the column name would be shown in the calculation field.



General Operators

- Following table shows the general operators supported by Tableau. These operators act on numeric, character and date data types.

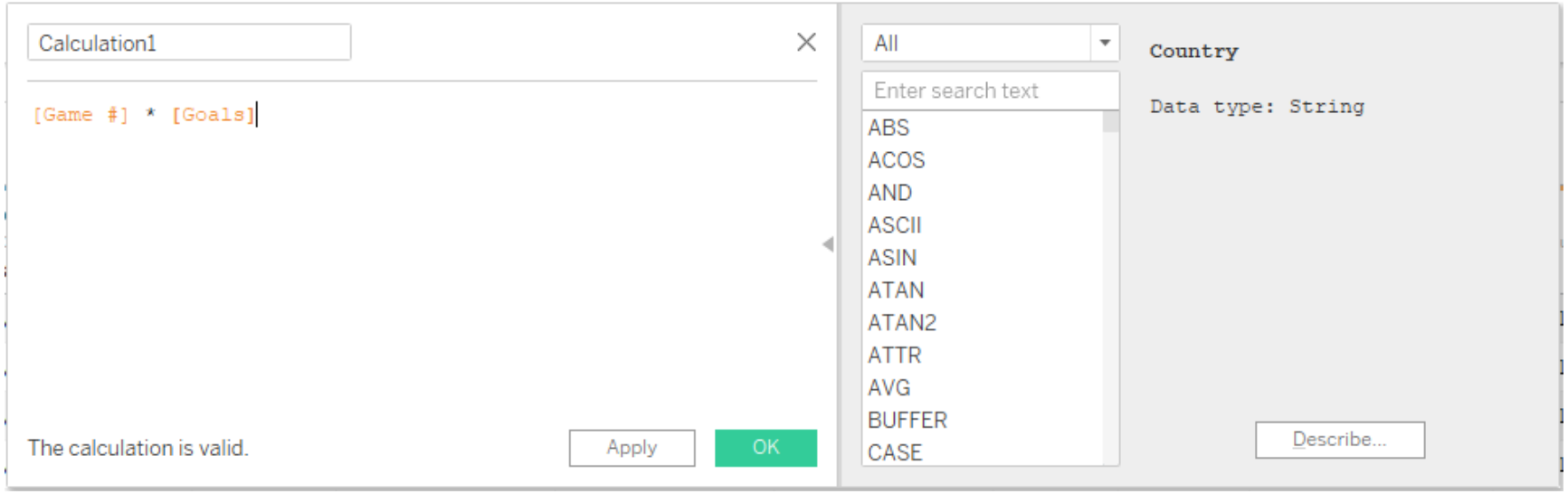
Operator	Description
+	Adds two numbers. Concatenates two strings. Adds days to dates.
–	Subtracts two numbers. Subtracts days from dates.



Arithmetic Operators

- These operators act only on numeric data types.

Operator	Description
*	Numeric multiplication
/	Numeric division
%	Reminder of numeric division
^	Raised to the power



- Both of the columns are numeric. This made the arithmetic operation work

Relational Operators

- These operators are used in expressions. Each operators compares two numbers, dates, or strings and returns a Boolean (**TRUE of FALSE**). Booleans themselves, however, cannot be compared using these operators

Operator	Description
= = or = (Equal to)	Compares two numbers or two strings or two dates to be equal. Returns the Boolean value TRUE if they are, else returns false.
!= or <> (Not equal to)	Compares two numbers or two strings or two dates to be unequal. Returns the Boolean value TRUE if they are, else returns false.
> (Greater than)	Compares two numbers or two strings or two dates where the first argument is greater than second. Returns the Boolean value TRUE if it is the case, else returns false.
< (Less than)	Compares two numbers or two strings or two dates where the first argument is smaller than second. Returns the Boolean value TRUE if it is the case, else returns false.

Logical Operators

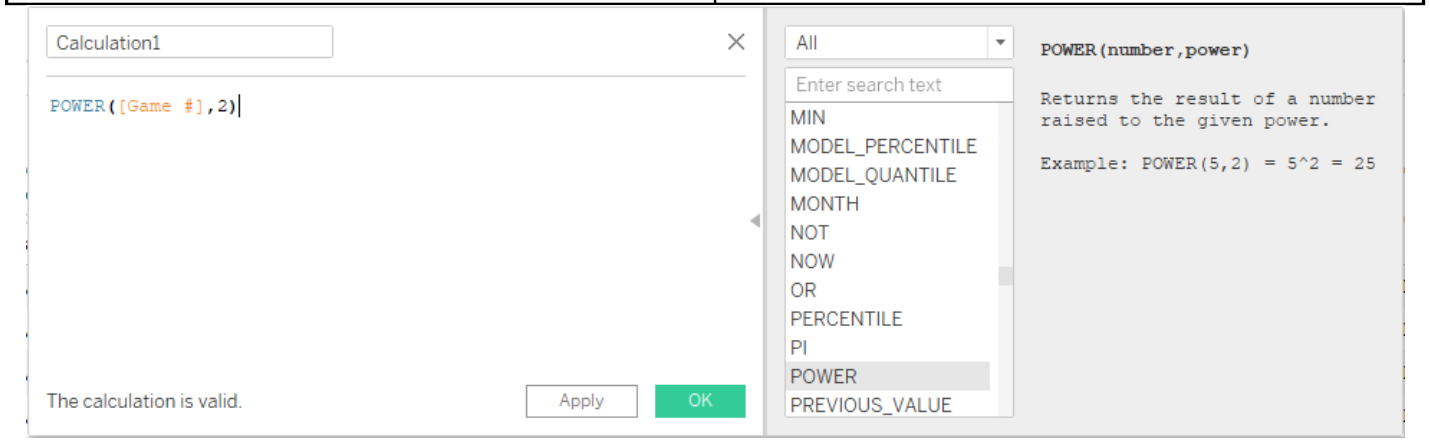
- These operators are used in expressions whose result is a Boolean giving the output as TRUE or FALSE.

Operator	Description
AND	If the expressions or Boolean values present on both sides of AND operator is evaluated to be TRUE, then the result is TRUE. Else the result is FALSE.
OR	If any one or both of the expressions or Boolean values present on both sides of AND operator is evaluated to be TRUE, then the result is TRUE. Else the result is FALSE.
NOT	This operator negates the Boolean value of the expression present after it.

Number Functions

- These are the functions used for numeric calculations. They only take number as inputs. Following are some examples of important number functions.

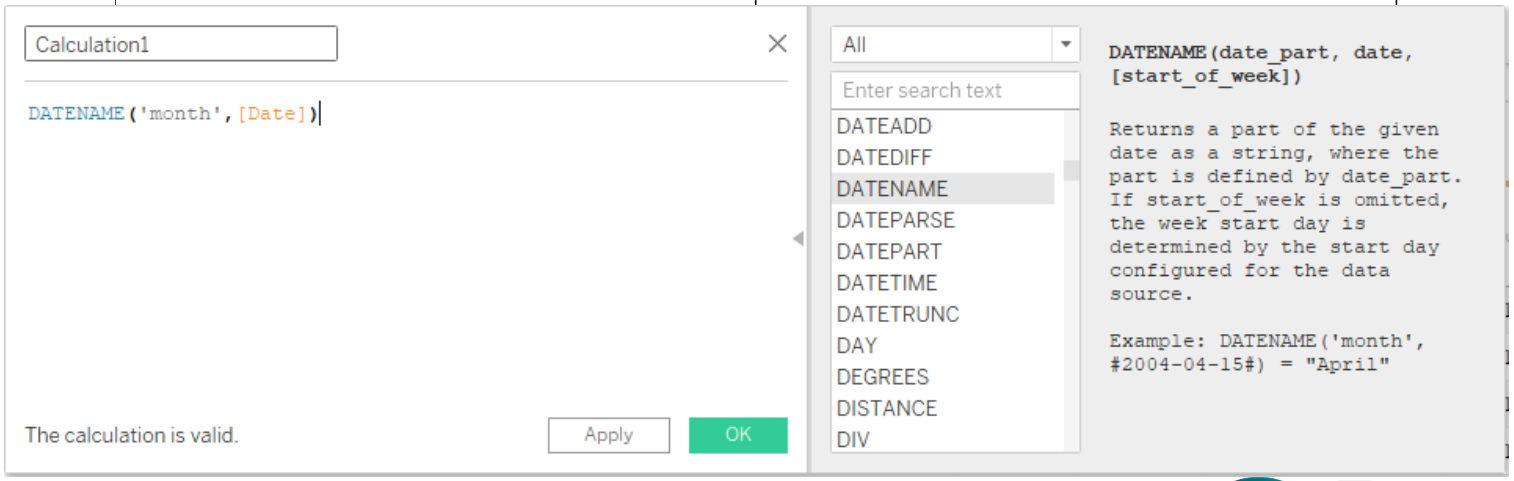
Function	Description
CEILING (number)	Rounds a number to the nearest integer of equal or greater value.
POWER (number, power)	Raises the number to the specified power.
ROUND (number, [decimals])	Rounds the numbers to a specified number of digits.



Date Functions

- All the date functions use the **date_part** which is a string indicating the part of the date such as, year, month or day. Following this table list some examples of important date functions.

Function	Description
DATEADD (date_part, increment, date)	Returns an increment added to the date. The type of increment is specified in **date_part**.
DATENAME (date_part, date, [start_of_week])	Returns **date_part** of date as a string. The **start_of_week**parameter is optional.
DAY (date)	Returns the day of the given date as an integer.
NOW( )	Returns the current date and time.



Logical Functions

- These functions evaluate some single value or the result of an expression and produce a Boolean output.

Function	Description
IFNULL (expression1, expression2)	The IFNULL function returns the first expression if the result is not null, and returns the second expression if it is null.
ISDATE (string)	The ISDATE function returns TRUE if the string argument can be converted to a date, and FALSE if it cannot.
MIN(expression)	The MIN function returns the minimum of an expression across all records or the minimum of two expressions for each record.

Aggregate Functions

- Aggregate Functions are a type of function where values of multiple rows are grouped together as the input to from a single value of more significant meaning, such as a set or list. Following table are some examples of the Aggregate function.

Function	Description
AVG(expression)	Returns the average of all the values in the expression. AVG can be used with numeric fields only. Null values are ignored.
COUNT (expression)	Returns the number of items in a group. Null values are not counted.
MEDIAN (expression)	Returns the median of an expression across all records. Median can only be used with numeric fields. Null values are ignored.
STDEV (expression)	Returns the statistical standard deviation of all values in the given expression based on a sample of the population.