tableau®

250+ Formulas with Examples

Basic Aggregations

- SUM(): SUM([Sales]) -- Total of a numeric field across partition
- AVG(): AVG([Discount]) -- Average value
- MIN(): MIN([Order Date]) -- Earliest or smallest value
- MAX(): MAX([Profit]) -- Latest or greatest value
- COUNT(): COUNT([Order ID]) -- Number of non-null records
- COUNTD(): COUNTD([Customer ID]) -- Distinct count of a field
- ATTR(): ATTR([Region]) -- Return value if consistent else *
- TOTAL(): TOTAL(SUM([Sales])) -- Grand total within table calc grouping
- ZN(): ZN([Profit]) -- Convert NULL to zero
- SIZE(): SIZE() -- Number of rows in the partition

Date Functions

- TODAY(): TODAY() -- Current date
- NOW(): NOW() -- Current date & time
- YEAR(): YEAR([Order Date]) -- Extract year
- MONTH(): MONTH([Order Date]) -- Month number
- DAY(): DAY([Order Date]) -- Day of month
- DATENAME(): DATENAME('weekday',[Order Date]) -- Full text name
- DATEPART(): DATEPART('quarter',[Order Date]) -- Numeric part of date
- DATEDIFF(): DATEDIFF('day',[Order Date],[Ship Date]) -- Difference between dates
- DATEADD(): DATEADD('year',1,[Order Date]) -- Shift date by interval
- DATETRUNC(): DATETRUNC('month',[Order Date]) -- Truncate date to granularity
- MAKEDATE(): MAKEDATE(2025,4,23) -- Create date from YMD
- MAKETIME(): MAKETIME(14,30,0) -- Create time
- DATEPARSE(): DATEPARSE('dd-MMM-yyyy','23-Apr-2025') -- Parse custom string
- MIN(): MIN([Order Date]) -- Earliest date in partition
- MAX(): MAX([Order Date]) -- Latest date

Logical & Type

- IF / THEN / ELSE: IF [Profit]>0 THEN 'Positive' ELSE 'Negative' END -- Row-level conditional logic
- IIF(): IIF([Ship Mode]='Same Day',1,0) -- Single-line conditional with three args
- CASE: CASE [Segment] WHEN 'Consumer' THEN 1 WHEN 'Corporate' THEN 2 END -- Simplify multi-equals conditions
- AND / OR / NOT: IF [Profit]>0 AND [Sales]>1000 THEN 'Top' END -- Combine boolean tests
- ISNULL(): ISNULL([Postal Code]) -- Check for missing values
- ZN(): ZN([Profit]) -- Turn NULL into zero
- NULLIF(): NULLIF([Sales],0) -- Return null when expression equals second
- IFNULL(): IFNULL([State],'Unknown') -- Replace null with alternative
- INT(): INT([Order ID]) -- Cast to integer
- FLOAT(): FLOAT([Quantity]) -- Cast to float

Mapping & Geo

- MAKEPOINT(): MAKEPOINT([Lat],[Lon]) -- Create geographic point
- MAKELINE(): MAKELINE([Start], [End]) -- Create line for routes
- DISTANCE(): DISTANCE([Start],[End],'mile') -- Calculate distance units
- BUFFER(): BUFFER([Point],10,'km') -- Radius around location (2020.4+)
- AREA(): AREA([Polygon]) -- Surface area measure
- HEXBIN() (Map): HEXBIN([Lon],[Lat]) -- Spatial density grid
- REGION(): [Postal Code] recognized -- Automatic geocoding role
- Spatial Join: Join two spatial layers on intersection -- Combine polygons/points

Number Functions

- ABS(): ABS([Profit]) -- Return absolute value
- CEILING(): CEILING([Discount]) -- Round up to nearest int
- FLOOR(): FLOOR([Discount]) -- Round down
- ROUND(): ROUND([Sales],0) -- Round to N decimals
- POWER(): POWER([Sales],2) -- Raise to exponent
- SQRT(): SQRT([Sales]) -- Square root
- LOG(): LOG([Sales]) -- Natural log
- LOG10(): LOG([Sales],10) -- Base-10 log
- PI(): PI() -- Constant
- RANDOM(): RANDOM() -- Random number 0-1 (v2024.1)
- MOD(): MOD([Row ID],2) -- Modulo remainder
- SIGN(): SIGN([Profit]) -- Return 1,0,-1 sign value

String Functions

- LEFT(): LEFT([Product Name],3) -- Leftmost N characters
- RIGHT(): RIGHT([Category],2) -- Rightmost N chars
- MID(): MID([SKU],2,4) -- Substring
- LEN(): LEN([State]) -- String length
- LOWER(): LOWER([City]) -- Lowercase
- UPPER(): UPPER([City]) -- Uppercase
- TRIM(): TRIM([Ship Mode]) -- Remove leading/trailing spaces
- REPLACE(): REPLACE([Phone],'-','') -- Substitute text
- SPLIT(): SPLIT([Email],'@',1) -- Split string on delimiter
- FIND(): FIND([Email],'@') -- Position of substring
- CONTAINS(): CONTAINS([Comment],'urgent') -- Boolean contains check
- STARTSWITH(): STARTSWITH([City],'New') -- Prefix check
- ENDSWITH(): ENDSWITH([City],'ville') -- Suffix check
- ASCII(): ASCII('A') -- ASCII code of char
- CHAR(): CHAR(65) -- Character from code
- STR(): STR([Order ID]) -- Cast number to string
- SPACE(): SPACE(5) -- Return N spaces
- URLENCODE(): URLENCODE([URL]) -- Encode special URL chars

Table Calculations

- WINDOW_SUM(): WINDOW_SUM(SUM([Sales])) -- Sum across window defined by compute using
- WINDOW_AVG(): WINDOW_AVG(AVG([Profit])) -- Average across window
- WINDOW_MIN(): WINDOW_MIN(MIN([Sales])) -- Minimum across window
- WINDOW_MAX(): WINDOW_MAX(MAX([Sales])) -- Maximum across window
- RUNNING_SUM(): RUNNING_SUM(SUM([Sales])) -- Cumulative total
- RUNNING_AVG(): RUNNING_AVG(AVG([Profit])) -- Cumulative average
- RUNNING_MIN(): RUNNING_MIN(MIN([Profit])) -- Cumulative minimum
- RUNNING_MAX(): RUNNING_MAX(MAX([Profit])) -- Cumulative maximum
- LOOKUP(): LOOKUP(SUM([Sales]),-1) -- Reference relative row
- FIRST(): FIRST() -- Index offset from first row in partition
- LAST(): LAST() -- Offset from last row
- INDEX(): INDEX() -- Sequential row number
- RANK(): RANK(SUM([Sales])) -- Rank with gaps
- RANK_DENSE(): RANK_DENSE(SUM([Sales])) -- Dense rank
- RANK_PERCENTILE(): RANK_PERCENTILE(SUM([Sales])) -- Percentile rank 0-1
- PERCENTILE(): PERCENTILE([Sales],0.9) -- 90th percentile within window
- WINDOW_PERCENTILE(): WINDOW_PERCENTILE(SUM([Sales]),0.75) -- Percentile across window
- NTILE(): NTILE(4) -- Bucket rows into N tiles
- WINDOW_STDEV(): WINDOW_STDEV(SUM([Sales])) -- Std dev across window
- WINDOW_VAR(): WINDOW_VAR(SUM([Sales])) -- Variance across window

Dashboards & Actions

- Show Filter: Right-click dimension > Show Filter -- Offer user interactive filter
- Dashboard Action Filter: Dashboard > Actions > Add Filter -- Pass selection between sheets
- Highlight Action: Add Highlight -- Emphasize related marks
- URL Action: Add URL Action -- Open external link on click
- Parameter Action: Add Parameter Action -- Update parameter via click/hover
- Set Action: Add Set Action -- Update set membership via interaction
- Story Point: New Story -- Sequence of dashboard narrative
- Device Layout: Dashboard > Device Preview -- Optimize view for mobiles

Level of Detail (LOD)

- { FIXED : ... }: { FIXED : SUM([Sales]) } -- Aggregate ignoring viz level for true total
- { FIXED [State] : ... }: { FIXED [State] : AVG([Profit]) } -- State-level value regardless of view
- { INCLUDE [Product] : ... }: { INCLUDE [Product] : SUM([Sales]) } -- Add finer granularity than view
- { EXCLUDE [Region] : ... }: { EXCLUDE [Region] : AVG([Sales]) } -- Remove dimension from aggregation
- LOD + DATE: { FIXED DATETRUNC('month',[Order Date]) : SUM([Sales]) } -- Monthly totals independent of view
- ATTR() with LOD: IF { FIXED : COUNTD([Customer ID]) } >100 THEN 'Large' END -- Use LOD inside logical calc
- FIXED & PARAM: { FIXED : SUM(IF [Segment]=[p.Segment] THEN [Sales] END) } -- Dynamic totals by parameter
- LOD Nested: { FIXED [Category] : AVG({ FIXED [Sub-Category] : SUM([Sales]) }) } -- Nested LOD for meta agg
- LOD Filtering: IF { EXCLUDE [Customer ID] : SUM([Sales]) } > 1000 THEN 'VIP' END -- Use LOD to filter by group metrics
- REFERENCE: SUM([Sales]) / { FIXED : SUM([Sales]) } -- Compute percent of total

Statistical & Analytics

- MEDIAN(): MEDIAN([Sales]) -- Median value
- STDEV(): STDEV([Sales]) -- Sample standard deviation
- VAR(): VAR([Sales]) -- Sample variance
- CORR(): CORR([Sales],[Profit]) -- Correlation coefficient
- COVAR(): COVAR([Sales],[Profit]) -- Covariance
- TRENDLINE: Add Trend Line (Linear) -- Visualize regression trend
- FORECAST: Enable Forecast -- Automatic exponential smoothing projection
- REFERENCE LINE: Add average reference line -- Show benchmark across axis
- CLUSTER: Analytics > Cluster -- Automated k-means segmentation
- BOX PLOT: Show Box Plot -- Five-number summary
- PERCENTILE(): PERCENTILE([Sales],0.95) -- 95th percentile row-level
- QUANTILE(): QUANTILE([Sales],0.25) -- Quartile value
- Z-SCORE: (SUM([Sales])-WINDOW_AVG(SUM([Sales])))/WINDOW_STDEV(SUM([Sales])) -- Standardize metric
- BIN(): BIN([Age],5) -- Bucket continuous into bins
- Histogram: Show Me > Histogram -- Distribution view

User Functions & Security

- USERNAME(): USERNAME() -- Return current Tableau Server/Cloud user
- ISMEMBEROF(): ISMEMBEROF('Sales') -- Check group membership
- FULLNAME(): FULLNAME() -- Display full user name
- TODAY() filter: TODAY()=DATE([Login Date]) -- Row-level security by date
- PASSWORD(): PASSWORD('secret') -- Encrypt string (Tableau Prep)
- ROW LEVEL SECURITY: User filter with security table -- Restrict data per user