



# EXCEL DATABASE FUNCTIONS CHEATSHEET



Video & Practice File: <https://bit.ly/excel-db-functions>

## 1 DSUM Function: Single filter criteria

Syntax DSUM(database, field, criteria)

`=DSUM(DataTable[#All], "Amount", $H$5:$H$6)`

| Type    | Date      | Invoice | Name   | Amount      | Single Criteria |                 |             |             |
|---------|-----------|---------|--------|-------------|-----------------|-----------------|-------------|-------------|
| Level 1 | 1/28/2021 | 595     | Poole  | 8,000       | Type            |                 |             |             |
| Level 1 | 2/3/2021  | 600     | Davis  | 6,000       | Level 1         |                 |             |             |
| Level 1 | 5/24/2021 | 607     | Dune   | 6,000       |                 |                 |             |             |
| Level 2 | 1/19/2021 | 591     | Bryant | 34,970      |                 |                 |             |             |
| Level 2 | 2/25/2021 | 592     | Blythe | 25,196      |                 |                 |             |             |
| Level 2 | 5/28/2021 | 569     | Porter | 24,914      |                 |                 |             |             |
|         |           |         |        | <b>DSUM</b> | <b>DCOUNT</b>   | <b>DAVERAGE</b> | <b>DMAX</b> | <b>DMIN</b> |
|         |           |         |        | 20,000      | 3               | 6,667           | 8,000       | 6,000       |

All functions share the same syntax: Simply replace DSUM with DCOUNT or DAVERAGE etc. to change the aggregation method.

## 2 DSUM Function: Multiple AND criteria

`=DSUM(DataTable[#All], "Amount", $N$5:$P$6)`

| Type    | Date      | Invoice | Name   | Amount      | Multiple AND Criteria |                 |              |             |
|---------|-----------|---------|--------|-------------|-----------------------|-----------------|--------------|-------------|
| Level 1 | 1/28/2021 | 595     | Poole  | 8,000       | Type                  | Date            | Date         |             |
| Level 1 | 2/3/2021  | 600     | Davis  | 6,000       | Level 1               | >=01/01/2021    | <=03/31/2021 |             |
| Level 1 | 5/24/2021 | 607     | Dune   | 6,000       |                       |                 |              |             |
| Level 2 | 1/19/2021 | 591     | Bryant | 34,970      |                       |                 |              |             |
| Level 2 | 2/25/2021 | 592     | Blythe | 25,196      |                       |                 |              |             |
| Level 2 | 5/28/2021 | 569     | Porter | 24,914      |                       |                 |              |             |
|         |           |         |        | <b>DSUM</b> | <b>DCOUNT</b>         | <b>DAVERAGE</b> | <b>DMAX</b>  | <b>DMIN</b> |
|         |           |         |        | 14,000      | 2                     | 7,000           | 8,000        | 6,000       |

Add multiple AND criteria on the same row: Database functions have a built-in functionality to consider multiple criteria on the same row as AND criteria

## 3 DSUM Function: Multiple OR criteria on the same field

`=DSUM(DataTable[#All], "Amount", $T$5:$T$7)`

| Type    | Date      | Invoice | Name   | Amount      | Multiple OR Criteria - Same Field |                 |             |             |  |
|---------|-----------|---------|--------|-------------|-----------------------------------|-----------------|-------------|-------------|--|
| Level 1 | 1/28/2021 | 595     | Poole  | 8,000       | Name                              |                 |             |             |  |
| Level 1 | 2/3/2021  | 600     | Davis  | 6,000       | Poole                             |                 |             |             |  |
| Level 1 | 5/24/2021 | 607     | Dune   | 6,000       | Porter                            |                 |             |             |  |
| Level 2 | 1/19/2021 | 591     | Bryant | 34,970      |                                   |                 |             |             |  |
| Level 2 | 2/25/2021 | 592     | Blythe | 25,196      |                                   |                 |             |             |  |
| Level 2 | 5/28/2021 | 569     | Porter | 24,914      |                                   |                 |             |             |  |
|         |           |         |        | <b>DSUM</b> | <b>DCOUNT</b>                     | <b>DAVERAGE</b> | <b>DMAX</b> | <b>DMIN</b> |  |
|         |           |         |        | 32,914      | 2                                 | 16,457          | 24,914      | 8,000       |  |

Add each OR criteria on a new row: Database functions have a built-in functionality to consider each criteria on a new row as OR criteria

## 4 DSUM Function: Multiple OR criteria on multiple fields

`=DSUM(DataTable[#All], "Amount", $AF$5:$AG$7)`

| Type    | Date      | Invoice | Name   | Amount      | Multiple OR Criteria - Different Field |                 |             |             |  |
|---------|-----------|---------|--------|-------------|--|-----------------|-------------|-------------|--|
| Level 1 | 1/28/2021 | 595     | Poole  | 8,000       | Type                                   | Name            |             |             |  |
| Level 1 | 2/3/2021  | 600     | Davis  | 6,000       | Level 1                                |                 |             |             |  |
| Level 1 | 5/24/2021 | 607     | Dune   | 6,000       |  | Blythe          |             |             |  |
| Level 2 | 1/19/2021 | 591     | Bryant | 34,970      |  |                 |             |             |  |
| Level 2 | 2/25/2021 | 592     | Blythe | 25,196      |  |                 |             |             |  |
| Level 2 | 5/28/2021 | 569     | Porter | 24,914      |  |                 |             |             |  |
|         |           |         |        | <b>DSUM</b> | <b>DCOUNT</b>                          | <b>DAVERAGE</b> | <b>DMAX</b> | <b>DMIN</b> |  |
|         |           |         |        | 45,196      | 4                                      | 11,299          | 25,196      | 6,000       |  |

Criteria 1: Include all invoices where type = "Level 1" regardless of name

OR (+)

Criteria 2: Include all invoices where Name = "Blythe", regardless of type

Database functions can process multiple OR criteria on multiple fields.

## 5 DSUM Function: Multiple OR & AND criteria

`=DSUM(DataTable[#All], "Amount", $Z$5:$AB$7)`

| Type    | Date      | Invoice | Name   | Amount      | Multiple AND OR Criteria |                 |              |             |  |
|---------|-----------|---------|--------|-------------|--------------------------|-----------------|--------------|-------------|--|
| Level 1 | 1/28/2021 | 595     | Poole  | 8,000       | Type                     | Date            | Date         |             |  |
| Level 1 | 2/3/2021  | 600     | Davis  | 6,000       | Level 1                  | >=01/01/2021    | <=03/31/2021 |             |  |
| Level 1 | 5/24/2021 | 607     | Dune   | 6,000       | Level 2                  | >=01/01/2021    | <=03/31/2021 |             |  |
| Level 2 | 1/19/2021 | 591     | Bryant | 34,970      |                          |                 |              |             |  |
| Level 2 | 2/25/2021 | 592     | Blythe | 25,196      |                          |                 |              |             |  |
| Level 2 | 5/28/2021 | 569     | Porter | 24,914      |                          |                 |              |             |  |
|         |           |         |        | <b>DSUM</b> | <b>DCOUNT</b>            | <b>DAVERAGE</b> | <b>DMAX</b>  | <b>DMIN</b> |  |
|         |           |         |        | 74,166      | 4                        | 18,542          | 34,970       | 6,000       |  |

Combine OR & AND criteria: Database functions will follow the row rules and combine multiple OR & AND criteria.

## 6 DSUM Function: Using Wildcards

`=DSUM(DataTable[#All], "Amount", $AR$5:$AR$6)`

| Type    | Date      | Invoice | Name   | Amount      | Wildcards     |                 |             |             |  |
|---------|-----------|---------|--------|-------------|---------------|-----------------|-------------|-------------|--|
| Level 1 | 1/28/2021 | 595     | Poole  | 8,000       | Name          |                 |             |             |  |
| Level 1 | 2/3/2021  | 600     | Davis  | 6,000       | B*            |                 |             |             |  |
| Level 1 | 5/24/2021 | 607     | Dune   | 6,000       |               |                 |             |             |  |
| Level 2 | 1/19/2021 | 591     | Bryant | 34,970      |               |                 |             |             |  |
| Level 2 | 2/25/2021 | 592     | Blythe | 25,196      |               |                 |             |             |  |
| Level 2 | 5/28/2021 | 569     | Porter | 24,914      |               |                 |             |             |  |
|         |           |         |        | <b>DSUM</b> | <b>DCOUNT</b> | <b>DAVERAGE</b> | <b>DMAX</b> | <b>DMIN</b> |  |
|         |           |         |        | 60,166      | 2             | 30,083          | 34,970      | 25,196      |  |

Includes all invoices where the Name starts with the letter B and sums up their amounts.

Database functions are compatible with wildcard characters, such as \* and ? symbols

## 7 DGET Function: Extract a single value matching your criteria

`=DGET(DataTable[#All], "Amount", AX5:AX6)`

| Type    | Date      | Invoice | Name   | Amount | DGET    |
|---------|-----------|---------|--------|--------|---------|
| Level 1 | 1/28/2021 | 595     | Poole  | 8,000  | Invoice |
| Level 1 | 2/3/2021  | 600     | Davis  | 6,000  | 595     |
| Level 1 | 5/24/2021 | 607     | Dune   | 6,000  |         |
| Level 2 | 1/19/2021 | 591     | Bryant | 34,970 |         |
| Level 2 | 2/25/2021 | 592     | Blythe | 25,196 |         |
| Level 2 | 5/28/2021 | 569     | Porter | 24,914 | 8000    |

`=DGET(DataTable[#All], "Amount", AZ5:AZ6)`

| Type    | Date      | Invoice | Name   | Amount | DGET    |
|---------|-----------|---------|--------|--------|---------|
| Level 1 | 1/28/2021 | 595     | Poole  | 8,000  | Type    |
| Level 1 | 2/3/2021  | 600     | Davis  | 6,000  | Level 1 |
| Level 1 | 5/24/2021 | 607     | Dune   | 6,000  |         |
| Level 2 | 1/19/2021 | 591     | Bryant | 34,970 |         |
| Level 2 | 2/25/2021 | 592     | Blythe | 25,196 |         |
| Level 2 | 5/28/2021 | 569     | Porter | 24,914 | #NUM!   |

#NUM!: If more than one record matches the criteria, DGET returns the #NUM! error.  
#VALUE!: If no record matches the criteria, DGET returns the #VALUE! error.

### Why use Database functions?

1. Same, simple syntax for all functions
2. Overcomes limitation of OR criteria for SUMIFS, COUNTIFS etc.
3. Work with both multiple AND & OR criteria, or any combination thereof
4. Criteria is clearly visible in plain English
5. The criteria table can house formulas i.e., links to other cells, drop down lists etc.

### Try them all

DSUM, DAVERAGE, DCOUNT, DCOUNTA, DMAX, DMIN, DVAR, DSTDEV, DPRODUCT, DGET

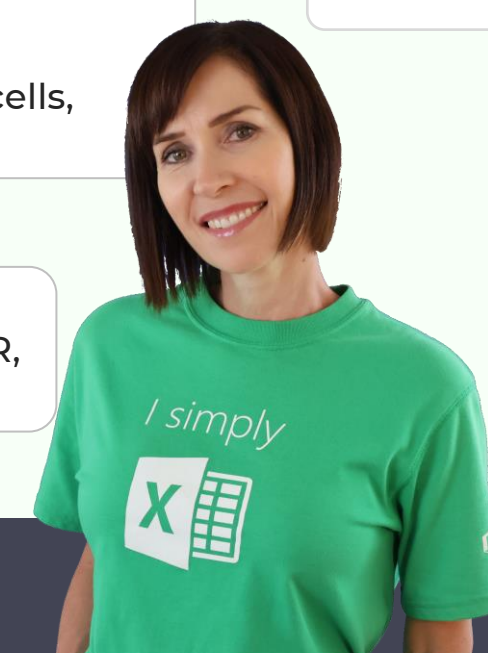
### Key Considerations

- Requires data in a tabular layout
- The 'Field' argument can be the column name or the column number
- The criteria table is not case-sensitive

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