



Tips & Tricks for Developers



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1. *Turn Multiple Records Into Single Row*
2. *Turn Single Row with Delimited Column Into Multiple Rows*
3. *Concat Dimensions and Hidden Category*
4. *Fileout Object Options*
5. *ISO Weeks*
6. *File_list and Calc_list Inputs*
7. *Starname in Builder*
8. *Directory Object and "Disk Diver"*
9. *Metadata Model*
10. *Sorting Reports using External QuickViews*
11. *Pie Chart Colors*
12. *Advanced Find in MultiTab*



Turn Multiple Records Into A Single Row with Delimited Column



Turn Multiple Records Into A Single Delimited Column

From:

Patient	MedicalProcedure
Alain	Laparoscopy
Alain	Cardiac stress test
Pete	Abreugraphy
Pete	Intravacular ultrasound
Pete	Posturography
Pete	Radiation therapy
Mickey	Cytoluminescent therapy

To:

Patient	Procedures
Alain	Cardiac stress test,Laparoscopy
Pete	Radiation therapy,Posturography,Intravacular ultrasound,Abreugraphy
Mickey	Cytoluminescent therapy



Create an Integrator script using Visual Integrator to transform the file *procedures.txt* (in Directory \01. *Multiple records into row*) into a file called *singlerow.txt* with one row per patient.

NOTE:

All class exercises use the **Developers_Tips_Tricks** directory.



Turn Multiple Records Into A Single Delimited Column

Sort and break to find first and last row per patient.

Persistent calc to concatenate procedures:

```
if([first]=1,  
    MedicalProcedure,  
    concat(MedicalProcedure, ",", Procedures)  
)
```

Filter on last (complete list) item of patient.



Turn Single Row with Delimited Column Into Multiple Rows



Turn Single Delimited Column Into Multiple Rows

From:

Patient	Procedures
Alain	Cardiac stress test,Laparoscopy
Pete	Radiation therapy,Posturography,Intravacular ultrasound,Abreugraphy
Mickey	Cytoluminescent therapy

To:

Patient	MedicalProcedure
Alain	Laparoscopy
Alain	Cardiac stress test
Pete	Abreugraphy
Pete	Intravacular ultrasound
Pete	Posturography
Pete	Radiation therapy
Mickey	Cytoluminescent therapy



Create an Integrator script using Visual Integrator to transform the file *singlecolumn.txt* (in Directory \02. *Single Row to Multiple Records*) into a file called *multiplerows.txt* with one row per patient for each medical procedure.



Turn Single Delimited Column Into Multiple Rows

First count the number of delimiters

Take the length of the string and subtract the length of the string where the delimiter (comma) is replaced by nothing!

```
length(Procedures) - length(replace(Procedures, ",", ""))
```



Turn Single Delimited Column Into Multiple Rows

Expand using the number of delimiters

Duplicate the rows with an “expand column” which defines the index.

Use scan() to get the correct item with the index that was defined by the Expand.



Concat Dimensions and the Hidden Category



Concat Dimensions

- Provides a way to reduce the number of Core Dimensions
 - *At the expense of some performance*

Open with Visual Builder the mtd_start.dsc.

Reduce the number of Core Dimensions to 7 by concatenating all related columns.

Create a DivePlan that does not show the concatenated column.



Concat Dimensions: How does it work? (1)

- Concatenate multiple Dimensions to one concat Dimension
- Add both the former Dimensions and their former Info Fields as Info Field to the concat Dimension



Concat Dimensions: How does it work? (2)

- Use DiveMaster to:
 - *Promote Dimensions and Info Fields to Dynamic Dimensions*
 - *Hide the concat Dimension using “_hidden” Category*



When to apply?

- Keep in mind the “Rule of Twenty”
- Especially when the future Dimension is used for diving



Fileout Object



Append option

- Read today's data and add it to total data
- File format (column order) does matter!



Safe write option

- Safely write output to the same input file
- Cannot be used with **append** option



ISO Weeks

(International Organization for
Standardization)



ISO Weeks

- Integrator does not support ISO weeks
- Can be calculated using a Calc object

Create a script that calculates the ISO (International Organization for Standardization) week number for a given date (e.g. the date of all the files in your directory).

The definition of the ISO week Number 1 is:

- the week with the year's first Thursday in it (the ISO 8601 definition)
- the week starting with the Monday which is nearest in time to 1 January
- the week with the year's first working day in it (if Saturdays, Sundays, and 1 January are not working days)
- the week with January 4 in it
- the first week with the majority (four or more) of its days in the starting year
- the week starting with the Monday in the period 29 December - 4 January
- the week with the Thursday in the period 1 - 7 January
- If 1 January is on a Monday, Tuesday, Wednesday or Thursday, it is in week 01. If 1 January is on a Friday, Saturday or Sunday, it is in week 52 or 53 of the previous year.



Dynamic Input using file_list_input



File_list_input sample uses:

- File with filenames to read on disk
- Use a Directory object to find new files as input

Note: file_list_input expects a column called "filename"

Open with a Filein object only the most recent file with the extension .DAT.



Use newest .dat file as input for script

- Directory input
- Filter on “dat” extension
- Sort on Date/Time Modified
- Keep only first row
 - Use *row_num() calc!*
- Input this stream to a Filein by setting its “file_list_input”

See example script.



Calc object supports dynamic calcs as well

- Dynamically input calculations using calc_list_input
 - e.g., *read calcs from a file!*
- Uses columns “name” and “value”

Create a script that generates firstname, lastname and birthdate.

Then use the calculations as saved in DateCalc.txt and GreetingCalc.txt to add the age, the ISOWeek number of the birthdate and a greeting.



Starname in Builder



Use Builder instead of Integrator
to concatenate multiple files.



Edit Sales.dsc to create the Model Sales.mdl using as input all files Sales*.dat
without using the Integrator.



Starname in Builder

- Visual Builder will automatically use starname when a '*' or '?' is encountered in the input file
- This can also be used as Builder parameter from the command line
- Or edit the DSC file replacing the word input by starname



Directory Object



Sample uses:

- Feed to Filein object
- Process multiple files using Execrows
- “Disk Diver”
 - *Create a Model of the hard disk*
 - *Use the “walk” option*



File cleanup script:

- Folder maintenance/Backup
 - Use *Directory object* to list files
 - Use *Calc* to check whether file is older than archiving date
 - Use *Execrows object* to archive the old files

Create a script that moves all files from the current directory when the modification date is newer than the parameter \$archivedate.



“Disk Diver”

- Use Diver to quickly find any file on any drive
- Find out how much space is used by which filetype

Create a Model of all the files on your hard drive.



Metadata Model



Use Integrator to create a Model about Model(s)

- Create Model input
- Set "Metadata" to true

- Used to find information on columns
- Use iterate instead of filenames when accessing multiple Models

Create a metadata Model to get all relevant information from all the Models in the current directory.



Sorting Reports using External QuickViews



Sorting a report

- By selecting the sorting column from a dropdown
- Useful to enable sorting on multiple columns in DivePort

Create a report in Diver/DivePort on sales.mdl where the end user can choose to sort on cases, revenue, margin or cost by selecting the appropriate column from a QuickView.



Create a 1-Dimensional Model for External QuickView

- Name is something like "sort_order"
- Values are the column names on which you want to be able to sort
- Metadata Model can be used to create this Model



Sort_order.int uses metadata from the Model to filter all the Summaries and create a Model for the external QuickView.



Add External QuickView for this Model

Edit QuickView

General | Dependencies | Values

Name:

Type:

Dimension:

Activate on Go Button Prompt on initial selection

Include Named Groups Skip "All Values"

Label Type:

DivePlan Type

Standard

External

Model



See sortedreport.mrk.



Add a column to sort on

- Set calculation to: Total[\$(sort_order)]
- Sort on this column

- When creating a Report, remove the column from the Report



Colors in Pie Charts



Colors in Pie Charts

- By default, colors are linked to Dimension values.
- **Advantage:**
Same color for same Dimension value in different pie charts
- **Disadvantage:**
Some values might get the same color!



See [piechartsamecolors.mrk](#) to see the disadvantage.



Colors in Pie Charts

- Use the following option to disable linking the colors to data

Graph options -> Appearance

- Uncheck "*Link Colors to Discrete Data Values*"

Uncheck the option so that it uses different colors.



Advanced Find in MultiTab



Create a multitab with only the three largest customers for each county? (1)

- MultiTab with for every county:
 - *Three Customers with the highest "Revenue YTD"*



How to find the three largest customers for each county? (2)

- Sort on Customer County, then on Revenue YTD (descending)
- Remember: use Organize -> Sort...

Use *FirstThreeCustomers_start.mrk* and create a MultiTab on customer county and customer, with only the three largest customers per county.



How to find the three largest customers for each county? (3)

- Use the Advanced Find dialog
 - “*First(3, Customer)*”

First(3, Customer) gets the first 3 customers for every Customer County Dimension based on the sorted Revenue YTD column.