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April 09, 2018

Translation of tables into a „linear“

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Recommended Citation

Hoppe, Daniel, "Translation of tables into a „linear“", Technical Disclosure Commons, (April 09, 2018)
https://www.tdcommons.org/dpubs_series/1140



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TRANSLATION OF TABLES INTO A „LINEAR“ FORMAT WITHIN A SPREADSHEET PROGRAM

Technical task:

The task of the technical innovation is to provide an efficient conversion of data in two-dimensional table format into a linearized data structure.

Initial situation:

A spreadsheet program such as Microsoft Excel works with two-dimensional tables that have rows and columns. Within the tables, data is usually stored line-by-line. The respective attributes are managed in separate columns with their own column headings.

Figure 1 shows a simple example of a data table. The column headers are highlighted in gray. This presentation is clear. However, another form of presentation is more suitable for the program-side further processing or for third-party systems.

In Figure 2 on the right, the annual values are entered in the column headed # Head Column and its values. These data were transferred from an XY representation to a linear format, see Figure 2 (red frame). For each year, another line was added.

The other column information is also included (in this case, the „Project“ column), see Figure 3.

The spreadsheet program Microsoft Excel has no functionality for a corresponding automatic conversion of the data.

Solution:

An extra functionality for a spreadsheet program automatically translates data from an XY format to a linearized data structure.

Figures (1-4) show an example.

The following table areas are to be specified in a dialog:

Specification of the columns that are written in separate lines during the conversion. This only happens if there is a cell content in the respective cell, see Figure 5.

Figure 6 shows the columns that remain the same during implementation.

In the following automatic conversion, the option is still offered that the generation of separate data lines only takes place if the cell contains a value entry other than „zero“.

The result of the implementation is shown in Figure 7.

The solution includes the automatic conversion into a linear data structure. Possibly. For dialogue, a different dialogue is more appropriate. For example, the entire table including column headings could be marked. Then you select the columns via a selection dialog, which should be converted into new lines. As a second selection, you now choose the columns that should remain the same in the implementation. The described function for converting tables into a linearized format yields as a result a suitable data structure for further processing as well as for third-party systems (for example as file export in the format „csv“).

With the featured functionality, the result is time-saving and safe to implement. A corresponding functionality is not available in Microsoft Excel.

The technical implementation of an automated conversion of tables in „XY format“ into a linearized data structure is exemplified using the tool AXCEL.

Call within tool „AXCEL“ with the key combination CTRL + d and marking of the areas, see Figure 8.

1. „Implementation area“: Mark the area to be written in separate lines during conversion, see Figure 9.

2. „Transmission“: marking of the area to be transmitted during the conversion, see Figure 10.

Implementation of data / presentation of results

During the conversion of the data, the query is made as to whether a separate line should be generated for cells in the conversion area that have the value „zero“, see Figure 11.

As an example, here is answered with „no“. The following table will then be created in the current Excel file and a result dialog will be displayed, see figures 12 and 13.

Advantages:

- Provision of a suitable (linearized) data structure for further processing as well as third-party systems.
- Time-saving and safe.

Possible application:

- Applicable in spreadsheet programs.

Stand der Technik

| | A | B | C | D | E | F | G | H |
|----|---|---|----------------------|------------|------|------|------|------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | Projekt | Projekt-ID | 2016 | 2017 | 2018 | 2019 |
| 5 | | | Polsterung "Hauser" | 5910 | | 100 | 500 | |
| 6 | | | Streichen "Herter" | 5911 | | | 600 | 100 |
| 7 | | | Schreinern "Huber" | 5912 | | | 200 | |
| 8 | | | Zaun "Heinrich" | 4711 | 2000 | 500 | | |
| 9 | | | Fassade "Müller" | 4712 | | 5000 | | |
| 10 | | | Gartenteich "Reiter" | 4910 | | 300 | 2000 | |
| 11 | | | Pflaster "Zeilinger" | 4911 | | | 8000 | 2000 |
| 12 | | | Fassade "Müller" | 4912 | | | *600 | |

Abbildung 1

Stand der Technik/ Technische Neuerung

| | A | B | C | D | E | F | G | H |
|----|---|---|----------------------|-------------------|-------------|-------------|-------------|-------------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | Projekt | Projekt-ID | 2016 | 2017 | 2018 | 2019 |
| 5 | | | Polsterung "Hauser" | 5910 | | 100 | 500 | |
| 6 | | | Streichen "Herter" | 5911 | | | 600 | 100 |
| 7 | | | Schreinern "Huber" | 5912 | | | 200 | |
| 8 | | | Zaun "Heinrich" | 4711 | 2000 | 500 | | |
| 9 | | | Fassade "Müller" | 4712 | | 5000 | | |
| 10 | | | Gartenteich "Reiter" | 4910 | | 300 | 2000 | |
| 11 | | | Pflaster "Zeilinger" | 4911 | | | 8000 | 2000 |
| 12 | | | Fassade "Müller" | 4912 | | | *600 | |

Abbildung 2

| | A | B | C | D |
|----|----------------------|------------|-------------|-------|
| 1 | Projekt | Projekt-ID | #Kopfspalte | #Wert |
| 2 | Polsterung "Hauser" | 5910 | 2017 | 100 |
| 3 | Polsterung "Hauser" | 5910 | 2018 | 500 |
| 4 | Streichen "Herter" | 5911 | 2018 | 600 |
| 5 | Streichen "Herter" | 5911 | 2019 | 100 |
| 6 | Schreinern "Huber" | 5912 | 2018 | 200 |
| 7 | Zaun "Heinrich" | 4711 | 2016 | 2000 |
| 8 | Zaun "Heinrich" | 4711 | 2017 | 500 |
| 9 | Fassade "Müller" | 4712 | 2017 | 5000 |
| 10 | Gartenteich "Reiter" | 4910 | 2017 | 300 |
| 11 | Gartenteich "Reiter" | 4910 | 2018 | 2000 |
| 12 | Pflaster "Zeilinger" | 4911 | 2018 | 8000 |
| 13 | Pflaster "Zeilinger" | 4911 | 2019 | 2000 |
| 14 | Fassade "Müller" | 4912 | 2018 | *600 |

Abbildung 3

| | A | B | C | D | E | F | G | H |
|----|---|---|----------------------|-------------------|-------------|-------------|-------------|-------------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | Projekt | Projekt-ID | 2016 | 2017 | 2018 | 2019 |
| 5 | | | Polsterung "Hauser" | 5910 | | 100 | 500 | |
| 6 | | | Streichen "Herter" | 5911 | | | 600 | 100 |
| 7 | | | Schreinern "Huber" | 5912 | | | 200 | |
| 8 | | | Zaun "Heinrich" | 4711 | 2000 | 500 | | |
| 9 | | | Fassade "Müller" | 4712 | | 5000 | | |
| 10 | | | Gartenteich "Reiter" | 4910 | | 300 | 2000 | |
| 11 | | | Pflaster "Zeilinger" | 4911 | | | 8000 | 2000 |
| 12 | | | Fassade "Müller" | 4912 | | | *600 | |

Abbildung 4

Technische Neuerung

| | A | B | C | D | E | F | G | H |
|----|---|---|----------------------|-------------------|-------------|-------------|-------------|-------------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | Projekt | Projekt-ID | 2016 | 2017 | 2018 | 2019 |
| 5 | | | Polsterung "Hauser" | 5910 | | 100 | 500 | |
| 6 | | | Streichen "Herter" | 5911 | | | 600 | 100 |
| 7 | | | Schreinern "Huber" | 5912 | | | 200 | |
| 8 | | | Zaun "Heinrich" | 4711 | 2000 | 500 | | |
| 9 | | | Fassade "Müller" | 4712 | | 5000 | | |
| 10 | | | Gartenteich "Reiter" | 4910 | | 300 | 2000 | |
| 11 | | | Pflaster "Zeilinger" | 4911 | | | 8000 | 2000 |
| 12 | | | Fassade "Müller" | 4912 | | | *600 | |

Abbildung 5

| | A | B | C | D | E | F | G | H |
|----|---|---|----------------------|-------------------|-------------|-------------|-------------|-------------|
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | Projekt | Projekt-ID | 2016 | 2017 | 2018 | 2019 |
| 5 | | | Polsterung "Hauser" | 5910 | | 100 | 500 | |
| 6 | | | Streichen "Herter" | 5911 | | | 600 | 100 |
| 7 | | | Schreinern "Huber" | 5912 | | | 200 | |
| 8 | | | Zaun "Heinrich" | 4711 | 2000 | 500 | | |
| 9 | | | Fassade "Müller" | 4712 | | 5000 | | |
| 10 | | | Gartenteich "Reiter" | 4910 | | 300 | 2000 | |
| 11 | | | Pflaster "Zeilinger" | 4911 | | | 8000 | 2000 |
| 12 | | | Fassade "Müller" | 4912 | | | *600 | |

Abbildung 6

| | A | B | C | D |
|----|----------------------|------------|-------------|-------|
| 1 | Projekt | Projekt-ID | #Kopfspalte | #Wert |
| 2 | Polsterung "Hauser" | 5910 | 2017 | 100 |
| 3 | Polsterung "Hauser" | 5910 | 2018 | 500 |
| 4 | Streichen "Herter" | 5911 | 2018 | 600 |
| 5 | Streichen "Herter" | 5911 | 2019 | 100 |
| 6 | Schreinern "Huber" | 5912 | 2018 | 200 |
| 7 | Zaun "Heinrich" | 4711 | 2016 | 2000 |
| 8 | Zaun "Heinrich" | 4711 | 2017 | 500 |
| 9 | Fassade "Müller" | 4712 | 2017 | 5000 |
| 10 | Gartenteich "Reiter" | 4910 | 2017 | 300 |
| 11 | Gartenteich "Reiter" | 4910 | 2018 | 2000 |
| 12 | Pflaster "Zeilinger" | 4911 | 2018 | 8000 |
| 13 | Pflaster "Zeilinger" | 4911 | 2019 | 2000 |
| 14 | Fassade "Müller" | 4912 | 2018 | *600 |

Abbildung 7

Technische Neuerung

Beispielablauf:

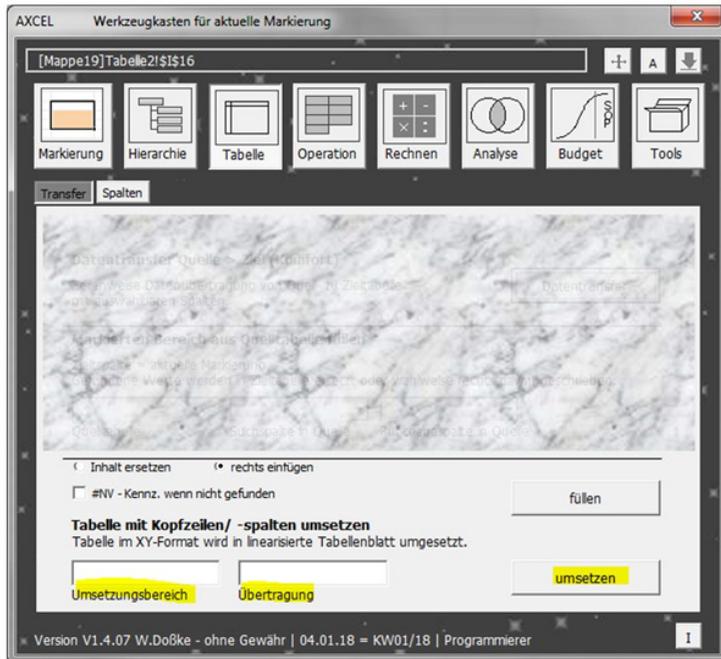


Abbildung 8

| | A | B | C | D | E | F |
|----|---|------------|------|------|------|------|
| 1 | | | | | | |
| 2 | | Projekt-ID | 2016 | 2017 | 2018 | 2019 |
| 3 | | 5910 | | 100 | 500 | |
| 4 | | 5911 | | 0 | 600 | 100 |
| 5 | | 5912 | | | 200 | |
| 6 | | 4711 | 2000 | 500 | | |
| 7 | | 4712 | | 5000 | | |
| 8 | | 4910 | | 300 | 2000 | |
| 9 | | 4911 | | | 8000 | 2000 |
| 10 | | 4912 | | | *600 | 0 |

Abbildung 9

| | A | B | C | D | E | F |
|----|---|------------|------|------|------|------|
| 1 | | | | | | |
| 2 | | Projekt-ID | 2016 | 2017 | 2018 | 2019 |
| 3 | | 5910 | | 100 | 500 | |
| 4 | | 5911 | | 0 | 600 | 100 |
| 5 | | 5912 | | | 200 | |
| 6 | | 4711 | 2000 | 500 | | |
| 7 | | 4712 | | 5000 | | |
| 8 | | 4910 | | 300 | 2000 | |
| 9 | | 4911 | | | 8000 | 2000 |
| 10 | | 4912 | | | *600 | 0 |

Abbildung 10

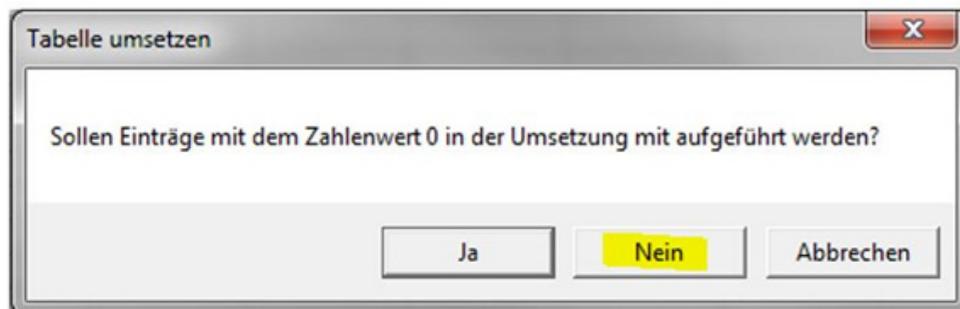


Abbildung 11

Technische Neuerung



Abbildung 12

| | A | B | C |
|----|------------|-------------|-------|
| 1 | Projekt-ID | #Kopfspalte | #Wert |
| 2 | 5910 | 2017 | 100 |
| 3 | 5910 | 2018 | 500 |
| 4 | 5911 | 2018 | 600 |
| 5 | 5911 | 2019 | 100 |
| 6 | 5912 | 2018 | 200 |
| 7 | 4711 | 2016 | 2000 |
| 8 | 4711 | 2017 | 500 |
| 9 | 4712 | 2017 | 5000 |
| 10 | 4910 | 2017 | 300 |
| 11 | 4910 | 2018 | 2000 |
| 12 | 4911 | 2018 | 8000 |
| 13 | 4911 | 2019 | 2000 |
| 14 | 4912 | 2018 | *600 |

Abbildung 13