# Technical Disclosure Commons

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# Analysis Frequency distribution of numerical

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# ANALYSIS FREQUENCY DISTRIBUTION OF NUMERI-CAL VALUES WITHIN A SPREADSHEET PROGRAM

**Technical task:**

The task of the technical innovation is to enable an efficient analysis of the frequency distribution of numerical values within a spreadsheet program.

**Initial situation:**

Tables are constructed in two dimensions with rows and columns. A cell is uniquely addressed via a defined row and column. A marker may include one or any selection of cells.

In practice, for example, there are several cells with numerical values.

If an analysis of the frequency distribution of the numerical values is required, the following procedure is usual. Figure 1 shows an example.

There are numerical values, see Figure 1.

For example, a function should analyze the frequency distribution in five equal classes (segments, sections). The result is shown in Figure 2.

The same sections, segments or classes result from the formula („maximum value" - „minimum value") / 5.

For example, in the second section from „> 22.2" to „<= 39.4", three values are included. This corresponds to 17.6% of the total number. These three values add up to 91, which in turn equals 10.4% of the total.

For further analyzes, limitations are conceivable in which, for example, the area with the highest total (here 574) is further analyzed in the same way.

**Solution:**

An additional functionality for a spreadsheet program provides a frequency distribution analysis function.

As a solution, the following analysis function for a frequency distribution of highlighted numerical values.

The functional principle corresponds to a classical frequency analysis with automated class formation and evaluation.

The user specifies the desired number of classes (sections, segment).

From this, the function automatically calculates equal-width classes between the maximum and minimum values and displays the result, see Figure 2.

This list is optionally output in the spreadsheet program on a worksheet. The extra function now allows you to mark the classes, marking the numeric values that are inside the class as cells.

By way of example, the last class with the highest total value is marked here, see Figure 3.

Additional functions can now be called for the selected cells. This, in turn, may be another (deeper) analysis of the frequency distribution.

For example, 3 classes were chosen for analysis, see Figure 4.

The technical implementation of a mark memory is exemplified by the tool AXCEL, see Figure 5 :.

Calling the function „frequency distribution" within the tool „AXCEL" with the Shortcut CTRL + d, see Figure 6.

Before the analysis, the user is queried for the number of segments or the equal-width classes. The result is the final analysis, see Figure 7.

By selecting one or more classes, the corresponding numerical values can be automatically marked after the dialog has ended, see Figure 8.

Marked cells of the selected class, see Figure 9.

The deeper analysis takes place via the same dialogue process, since the analysis refers to the marked cells.

**Advantages:**

■ Possibility of quick analysis of numeric values
■ Possibility of a deep (targeted) analysis of a value class
■ Efficiency (in terms of effort).

**Possible application:**

■ Applicable in spreadsheet programs..



Stand der Technik

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | 56 | 86 |
| 3 | | 32 | 21 |
| 4 | | 48 | 91 |
| 5 | | 30 | 42 |
| 6 | | 75 | 5 |
| 7 | | 74 | 76 |
| 8 | | 85 | 29 |
| 9 | | | 21 |
| 10 | | | 87 |
| 11 | | | 18 |
| 12 | | | |

Abbildung 1

## Stand der Technik/ Technische Neuerung



Abbildung 2



Abbildung 3



Abbildung 4

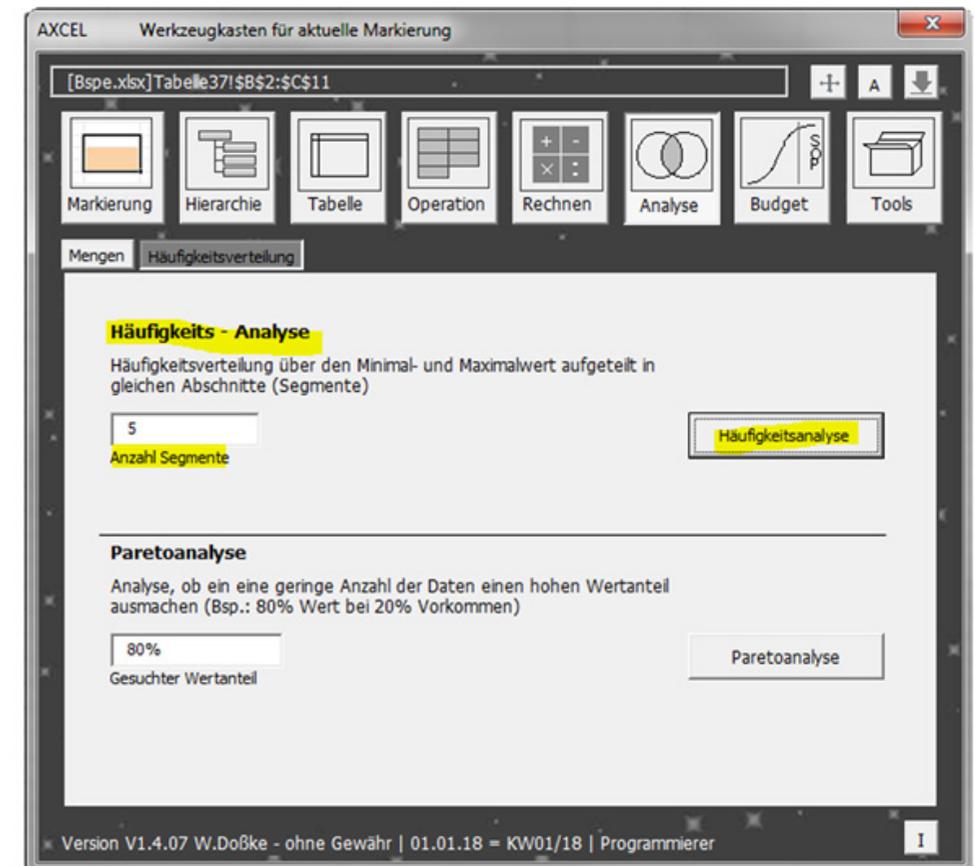## Technische Neuerung

**Beispielablauf:**



Abbildung 5



Abbildung 6

Technische Neuerung

**Häufigkeitsanalyse**

Markierung auf Teilbereiche einschränken per anklicken...
Bei der ersten Klasse (Zeile) gilt für "Von" die Beziehung >=

| Von (>) | Bis (<=) | Anzahl % | Anzahl | Summe % | Summe |
|---|---|---|---|---|---|
| 5,0 | 22 | 23,5% | 4,0 | 7,4% | 65 |
| 22 | 39 | 17,6% | 3,0 | 10,4% | 91 |
| 39 | 57 | 17,6% | 3,0 | 16,7% | 146 |
| 57 | 74 | 0,0% | 0,000 | 0,0% | 0,000 |
| 74 | 91 | 41,2% | 7,0 | 65,5% | 574 |

☑ Obige Analyse als Excel-Tabellenblatt ausgeben

beenden

Abbildung 7

**Häufigkeitsanalyse**

Markierung auf Teilbereiche einschränken per anklicken...
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| 22 | 39 | 17,6% | 3,0 | 10,4% | 91 |
| 39 | 57 | 17,6% | 3,0 | 16,7% | 146 |
| 57 | 74 | 0,0% | 0,000 | 0,0% | 0,000 |
| 74 | 91 | 41,2% | 7,0 | 65,5% | 574 |

☑ Obige Analyse als Excel-Tabellenblatt ausgeben

beenden

Abbildung 8

Technische Neuerung

| | A | B | C |
|---|---|---|---|
| 1 | | | |
| 2 | | 56 | 86 |
| 3 | | 32 | 21 |
| 4 | | 48 | 91 |
| 5 | | 30 | 42 |
| 6 | | 75 | 5 |
| 7 | | 74 | 76 |
| 8 | | 85 | 29 |
| 9 | | | 21 |
| 10 | | | 87 |
| 11 | | | 18 |

Abbildung 9