User manual for Excel Map

Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20
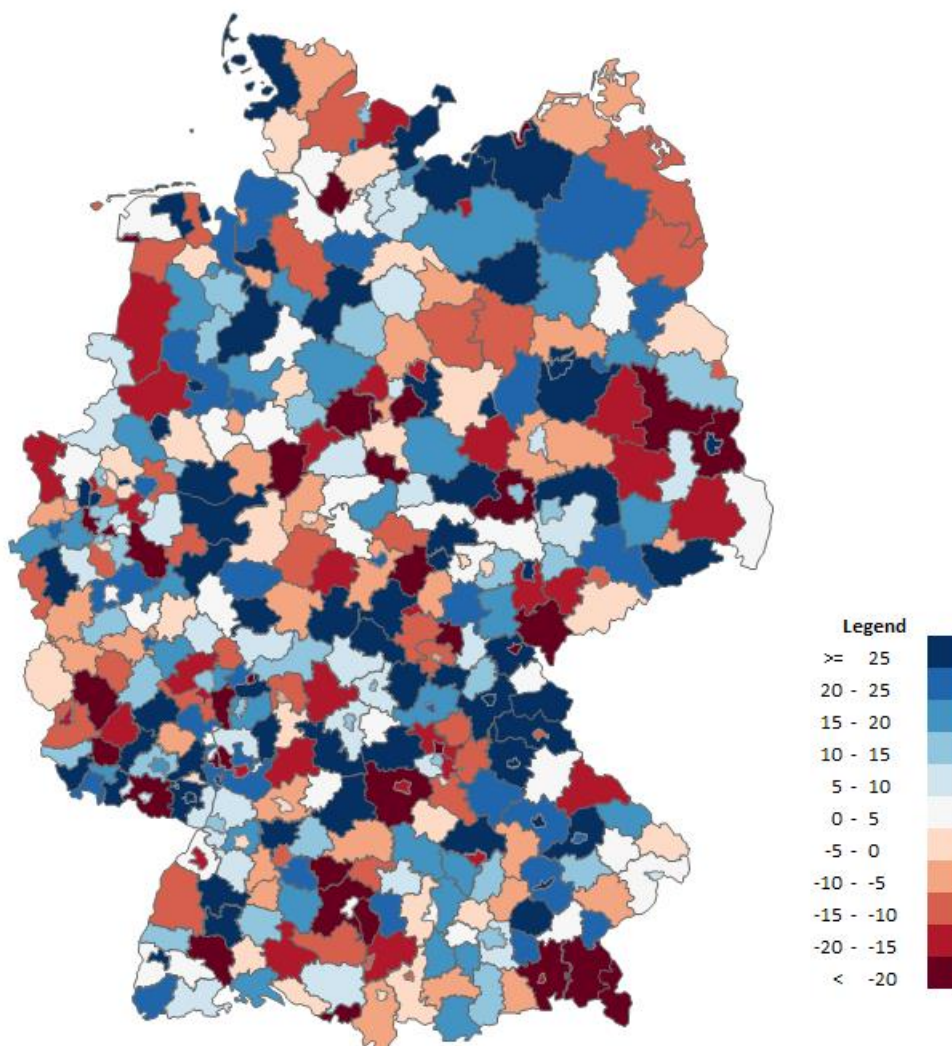
Contents

1. Introduction

Excel Map is a comfortable and flexible software, which allows connecting data with location. It effectively supports trade, marketing, market, clients, demographic and statistical analysis. Its universal character, embedding in Excel environment and possibility of connection with other files makes it useful in many organizations and companies about any specialization and various applications.

User manual step by step describes how to work with software and create charts. The screenshots were made in the Germany map, but the same rules apply to other maps and countries. The manual also contains a few general tips about these charts and their application (especially filled map), it is not a knowledge compendium about creating charts but only guidelines on how to build them in the software.

User manual contains following symbols:

! Important

✓ Tip

The code used in this software was secured in VBA editor, what makes it impossible to record macro from software level. It is possible to record macro from different worksheet level and save it in another file.

Both the software and this user manual are protected by copyright, provisions of international conventions and other laws on the protection of intellectual property rights.

Assistance in servicing the software can be obtained by writing to the e-mail address contact@maps-for-excel.com or by calling +48 500 196 861.

2. Requirements

2.1. MS Excel 2007 or higher
Program is saved as MS Excel Worksheet with .xlsm extend. Microsoft Office 2007 package or higher is needed to launch the program, wherein >2010 version is recommended as it has a built-in a more stable and more complex graphics engine. Program do not require installation.

2.2. Macro Support Enabled
Program is working on VBA code that is the reason why macro enabling is needed to proper functioning. It can be done each time program will be launched or once, going through *File > Options > Trust Center > Macro Settings.* Often backup saving is highly recommended when working with the software.

! The operation performed by macro can not be undone.
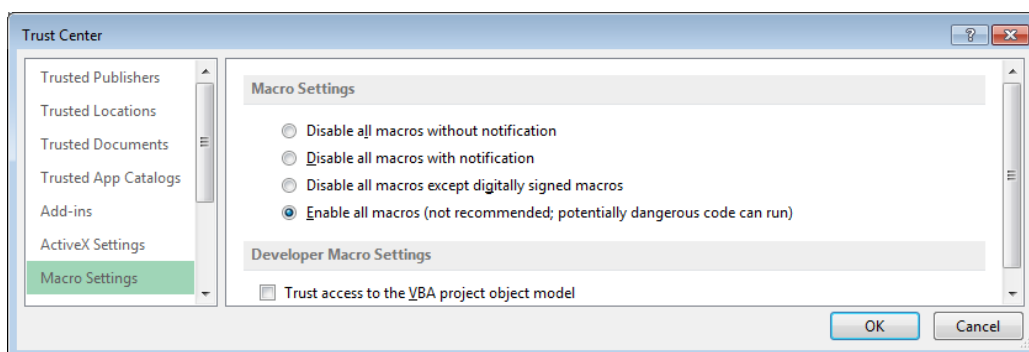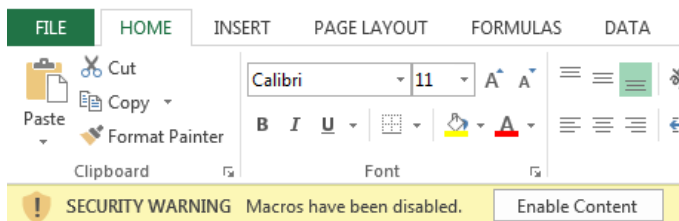
2.3. Intermediate knowledge of MS Excel

To comfortably and properly use the software the intermediate knowledge of MS Excel is needed. Especially in case of navigation in the program, shapes editing, cells formatting, search function. Usage of basic functionality, which is cartogram, should not be a problem for basic level.

3. Product Licensing

Product licensing depends on number of users, who are willing to use the software in Excel int the creator role. The reader role (the audience of the report) is free of charge.

Licensing takes place in 3 variants:

For 1 PC

For 3 PCs

For unlimited number of PCs

To increase the number of users, only the difference between versions should be paid.

The license of the program is lifetime and includes free updates within 1 year. To buy updates for next year, 25% of license value should be paid. The content of the license can be found inside the software.

4. Functionalities

4.1. Filled map

Filled map is a chart based on the map, showing numbers by changing the intensity of the color. Next to the map you can find a legend showing connection between value and color.
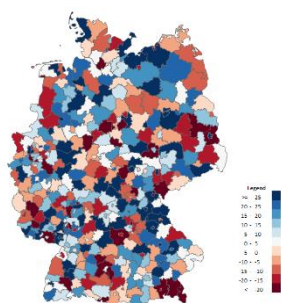
! The most important thing to get satisfactory and reliable effects is to define intervals (classes), which should be preceded by statistical distribution analysis. Modification of intervals is the key on what chart is showing and how will be interpreted.

✓ For those who are not familiar with statistics, the best solution is to use intervals equal in size or number of elements.
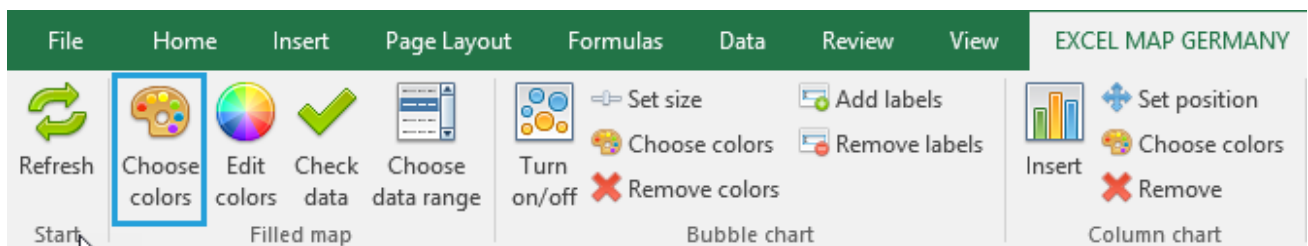
Choose colors

To build a filled map in the software:

1. Enter the data in sheet *Data* in column G.

2. Go to the *Map* tab and select *Choose colors* from the ribbon.

3. In window *Choose colors* select color and enter interval values.

4. Click *OK.*

Legend

>=	80	▮
60	- 80	▮
40	- 60	▮
20	- 40	▮
<	20	▮
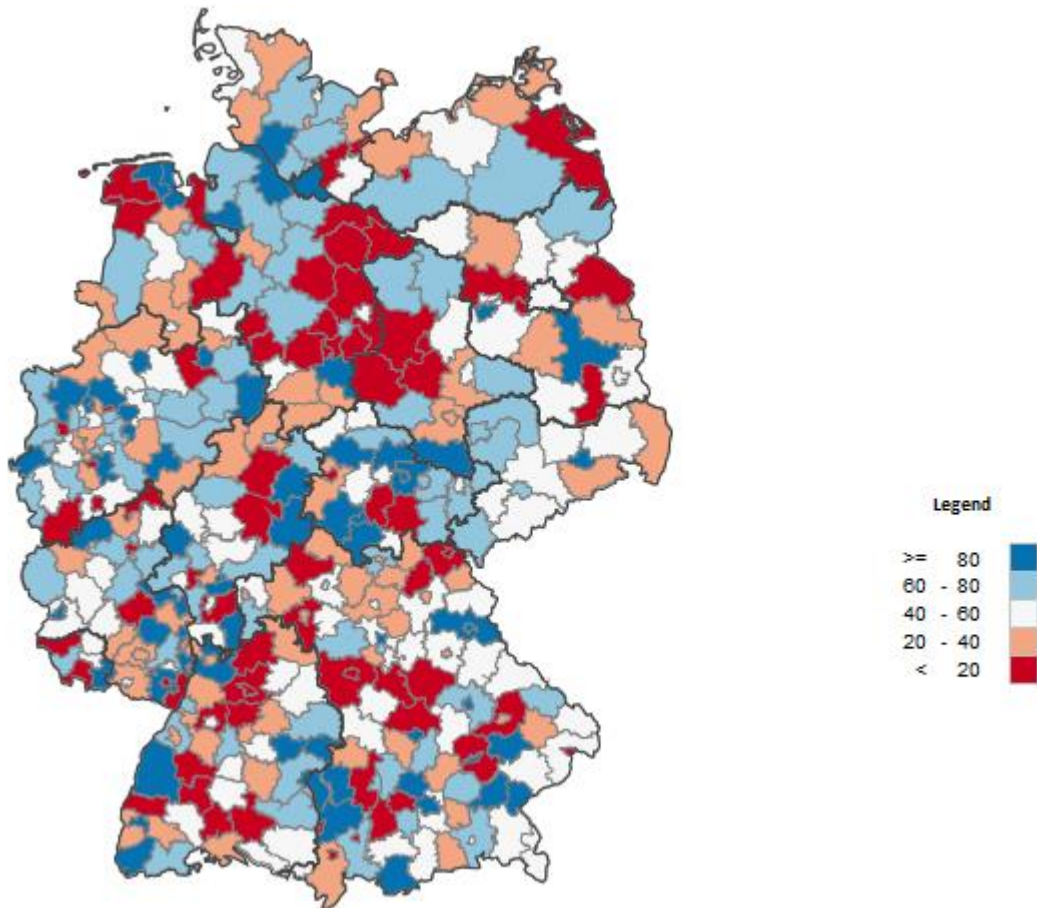
After clicking on area, you will receive a message from column T of the *Data* sheet. By default, it is showing name and value but it can be freely modified using formulas.

Microsoft Excel ✕

Berlin, Berlin: 89

OK
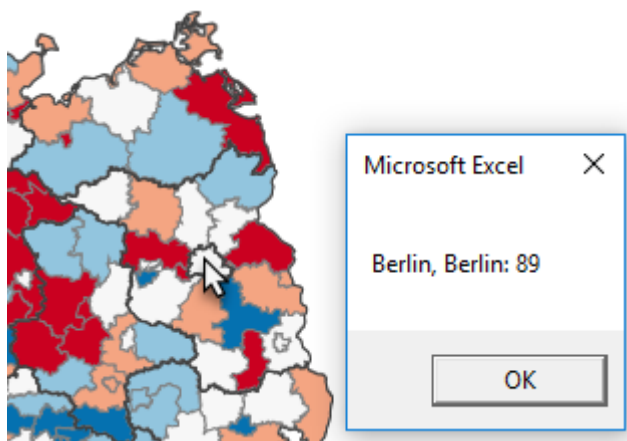
✓ To connect (source) data user can use search function, ex. VLOOKUP. In case function will not find searched value, the error is shown, to prevent such situation VLOOKUP function should be nested in IFERROR function. Furthermore, if some districts and countries have the same name, user should prepare unique column in source data (ex. with country name = country&district) and column with values.

	A	B	C	D	E
1	ID	Bundesland	Kreis	Kreis&Type	Type
30	s_Göppingen	Baden-Württemberg	Göppingen	GöppingenKreis	Kreis
31	s_Heidelberg	Baden-Württemberg	Heidelberg	HeidelbergStadt	Stadt
32	s_Heidenheim	Baden-Württemberg	Heidenheim	HeidenheimKreis	Kreis
33	s_Heilbronn	Baden-Württemberg	Heilbronn	HeilbronnKreis	Kreis
34	s_Heilbronn_s	Baden-Württemberg	Heilbronn	HeilbronnStadt	Stadt
35	s_Hohenlohekreis	Baden-Württemberg	Hohenlohekreis	HohenlohekreisKreis	Kreis

Example of connecting data for D33 cell of *Data* sheet:
= IFERROR(VLOOKUP(C33&E33;range;column_nr;0);0)
Where "range" and "column_nr" should be replaced with suitable information describing source data.

The legend (color palette) of the filled map is built from maximum 11 elements.

✓ It is caused by fact that human eye can freely distinguish 5 shades of one color.

These 11 elements can have one color (ex. blue), but different shades (then we are talking about a sequential scale) or two colors (diverging scale).

✓ By default it is red-blue palette because of its widest application and highly understanding, also by people with the disability of color blindness.

The legend placed in *Map* sheet is automatically refreshed and it is overwriting cells K21:O32 (user should not use them). Legend formatting (ex. numbers formatting) can be changed as in regular cells.
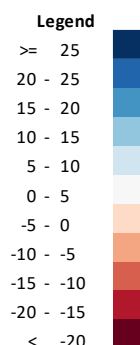
Edit colors
User can select from variety of palettes from the list but can also make his/her one by command button *Edit colors*. User's palette called "User" is at the end of the list.
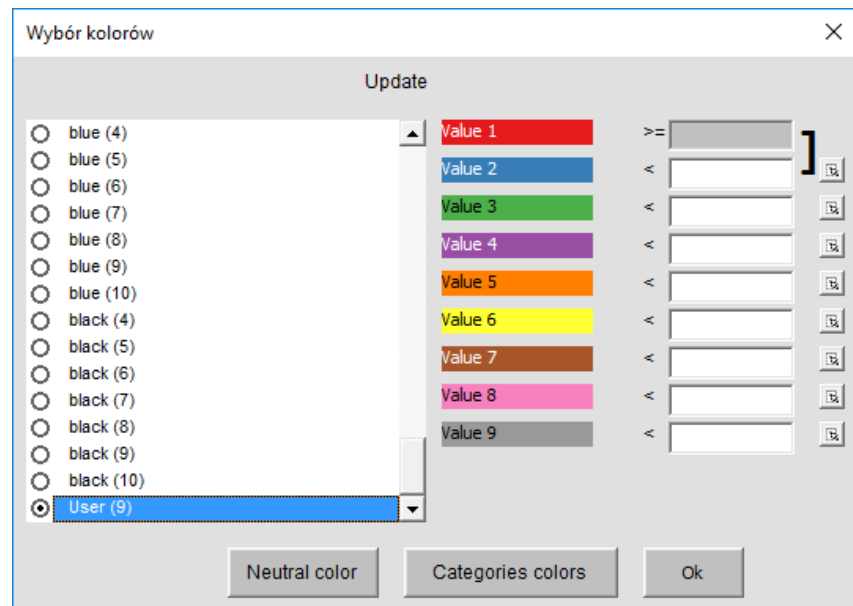
Filled map intervals in *Choose color* window can be entered manually or can be taken from one of cells. Ex. equal intervals can be calcuated with PERCENTILE function
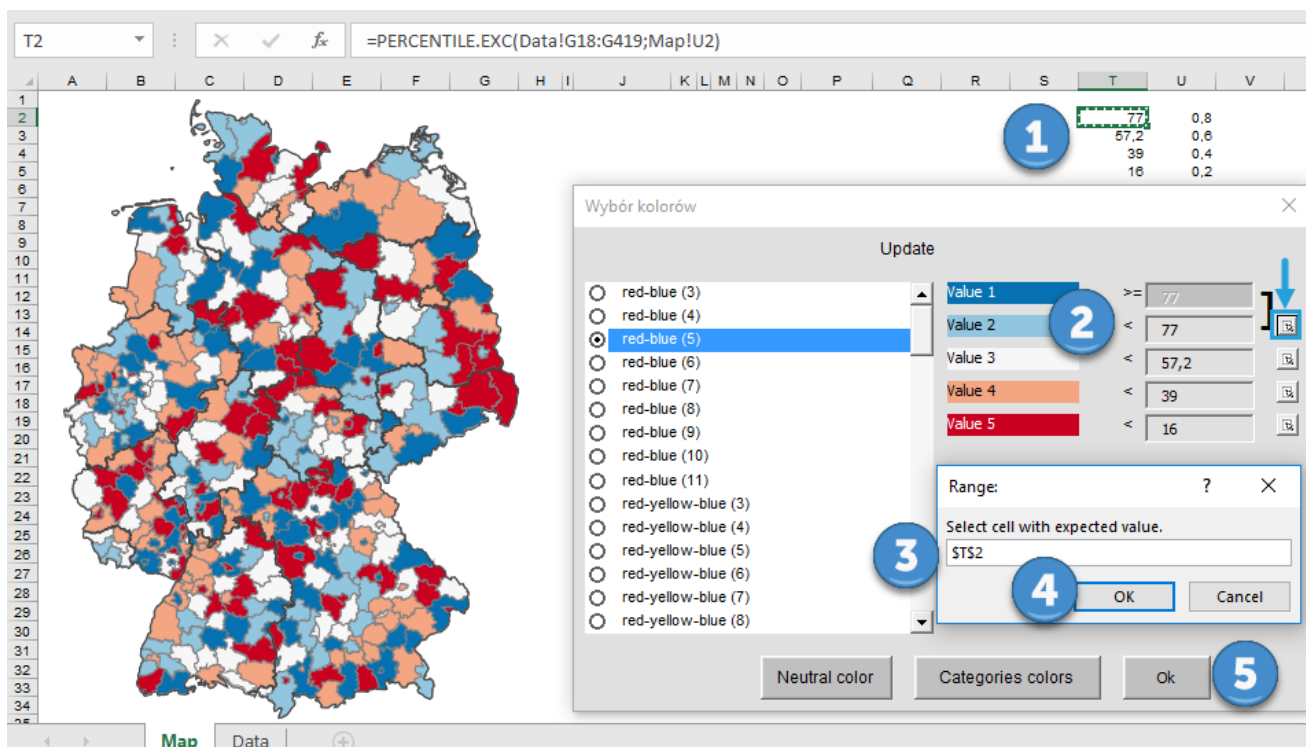
Check data
To check if the data used in the filled map are correct (in column G *Data* sheet) click *Check Data.*
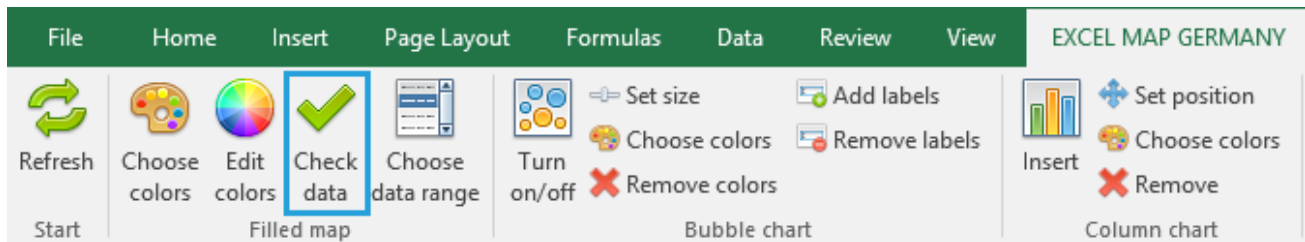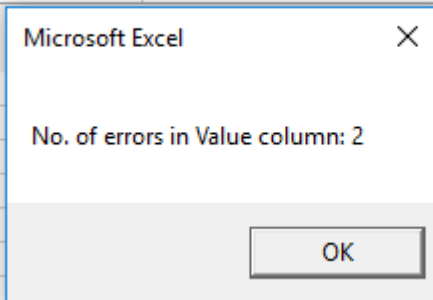
Select data range

User can build table with few indicators (e.g. for next years) to present it on the map. The heading should be changed in columns J:S (maximum of 10 additional columns are available) and complete data for these columns.

J	K	L
Value 1	Value 2	Value 3

J	K	L
Sales	Profit	Delivery cost
88	10	2
96	8	5
121	6	1

Next apply command *Choose data range* and select right column (heading).
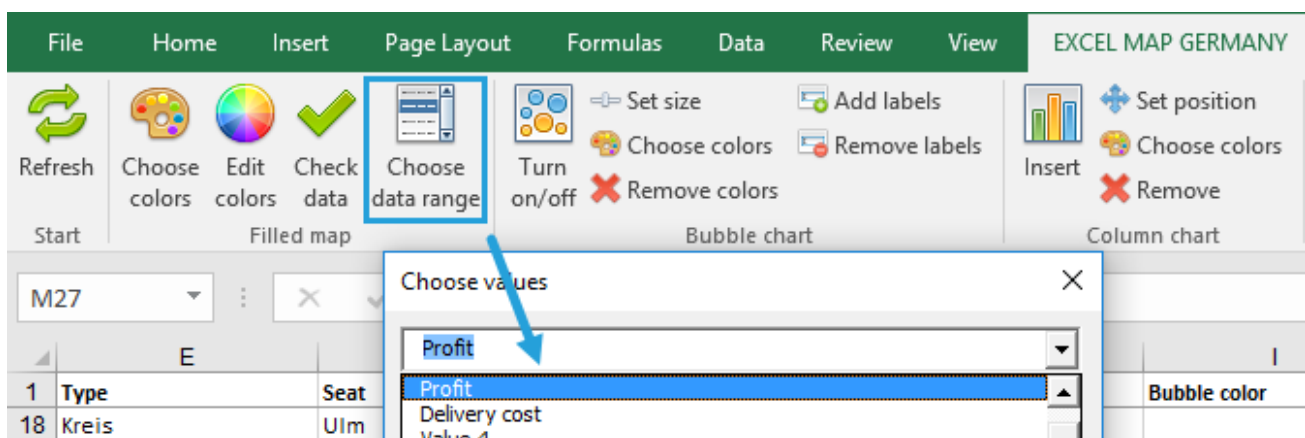
! The command overwrites the data in column G every time.

Category colors

To assign areas to categories colors scale (many different colors), assign to each area number from 1 to maximum 30 and in column G and select *Categories colors.*

F	G
Seat	**Value**
Ulm	1
Baden-Baden	2
Biberach an der Riß	3

Update

○ red-blue (3)	Value 1	>= ☐
○ red-blue (4)	Value 2	< ☐
◉ red-blue (5)	Value 3	< ☐
○ red-blue (6)	Value 4	< ☐
○ red-blue (7)	Value 5	< ☐
○ red-blue (8)		
○ red-blue (9)		
○ red-blue (10)		
○ red-blue (11)		
○ red-yellow-blue (3)		
○ red-yellow-blue (4)		
○ red-yellow-blue (5)		
○ red-yellow-blue (6)		
○ red-yellow-blue (7)		
○ red-yellow-blue (8)		

Neutral color   Categories colors   Ok

Select command *Edit names >* and assign names to numbers.

1.	John	16.	Categories 16
2.	James	17.	Categories 17
3.	Monica	18.	Categories 18
4.	Categories 4	19.	Categories 19
5.	Categories 5	20.	Categories 20
6.	Categories 6	21.	Categories 21
7.	Categories 7	22.	Categories 22
8.	Categories 8	23.	Categories 23
9.	Categories 9	24.	Categories 24
10.	Categories 10	25.	Categories 25
11.	Categories 11	26.	Categories 26
12.	Categories 12	27.	Categories 27
13.	Categories 13	28.	Categories 28
14.	Categories 14	29.	Categories 29
15.	Categories 15	30.	Categories 30

No. of categories   3

OK

Assigining colors to categories   ×

Colors assigned to categories

John

James

Monica

Edit names   Edit colors   Ok

Legend

John	(red)
James	(blue)
Monica	(green)
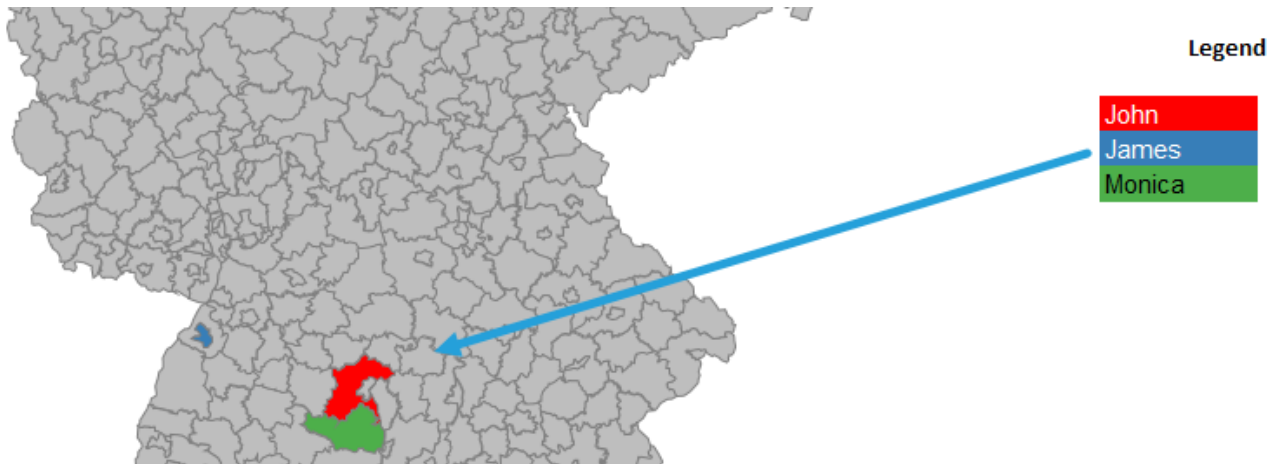
4.2. Bubble graph

Bubble graph is a diagram, which presents 2 number values for one point at the same time – one as bubble size, second as its color. In the software bubble chart uses the coordinates of the shapes as X and Y axis values.

To build bubble chart enter number value in column H sheet *Data.* It will automatically refresh *Map* tab, on which the bubble graph remains.

F	G	H
Seat	**Value**	**Bubble size**
Kiel		50
Hannover		
Düsseldorf		80
Wiesbaden		
Mainz		
Stuttgart		90
München		
Saarbrücken		
Potsdam		
Schwerin		
Dresden		
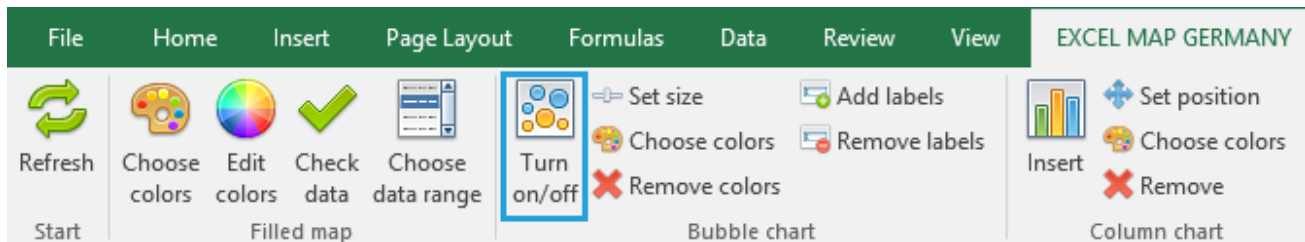
After clicking on single bubble message will be shown. It is generated from column T *Data* sheet.
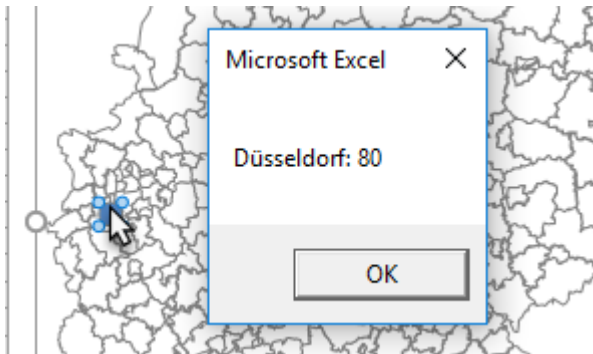
The coordinates of the town are in column V:W *Data* sheet.

User can add next bubbles/points (different than existing in table) below by filling next towns (addresses) and completing their coordinates in columns V:W. Bubble chart series are defined for 4000 rows.

Set size
To change bubble size, select command button *Set size* and move the slider.
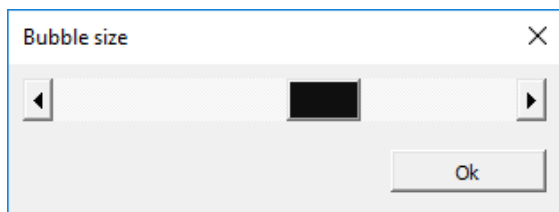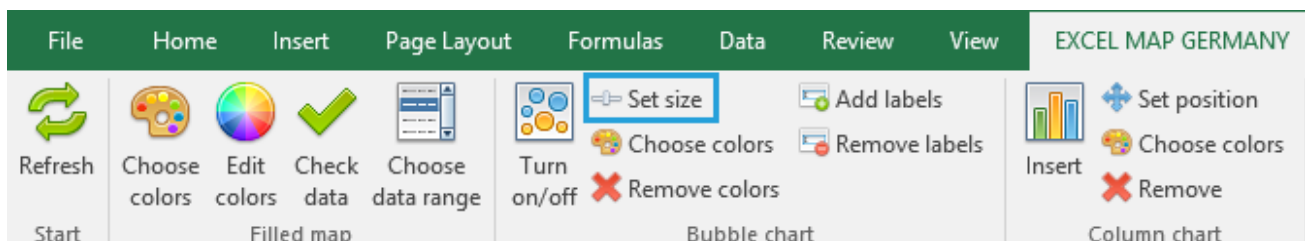
Select colors
On bubble chart user can also use fourth data dimension (in addition to longitude, latitude, and bubble size) which is bubble color. E.g. total sales can be presented in each location as bubble size and profit as bubble color. The control is done in the same way as in the case of a cartogram with the difference, that column I *Data* sheet is responsible for bubbles color.

F	G	H	I
Seat	Value	Bubble size	Bubble color
Kiel		50	75%
Hannover			
Düsseldorf		80	50%
Wiesbaden			
Mainz			
Stuttgart		90	25%
München			

File	Home	Insert	Page Layout	Formulas	Data	Review	View	EXCEL MAP GERMANY

Refresh | Choose colors | Edit colors | Check data | Choose data range | Turn on/off | ⇥ Set size · 🎨 Choose colors · ❌ Remove colors | 🖼 Add labels · 🖼 Remove labels | Insert · ✛ Set position · 🎨 Choose colors · ❌ Remove

Start — Filled map — Bubble chart — Column chart

Edit bubble chart colors ✕

Bubble chart colors

○ red-blue (3)	Value 1	>= 0,75
⦿ red-blue (4)	Value 2	< 0,75
○ red-blue (5)	Value 3	< 0,5
○ red-blue (6)	Value 4	< 0,25
○ red-blue (7)		
○ red-blue (8)		
○ red-blue (9)		
○ red-blue (10)		
○ red-blue (11)		
○ red-yellow-blue (3)		
○ red-yellow-blue (4)		
○ red-yellow-blue (5)		
○ red-yellow-blue (6)		
○ red-yellow-blue (7)		
○ red-yellow-blue (8)		

[Neutral color] [Categories colors] [Ok]

Assigning colors to categories works similar – in column I user enters number from 1 to 30.

F	G	H	I
Seat	**Value**	**Bubble size**	**Bubble color**
Kiel		50	1
Hannover			
Düsseldorf		80	2
Wiesbaden			
Mainz			
Stuttgart		90	3
München			

Assiginig colors to categories   ×

Colors assigned to categories

John
James
Monica
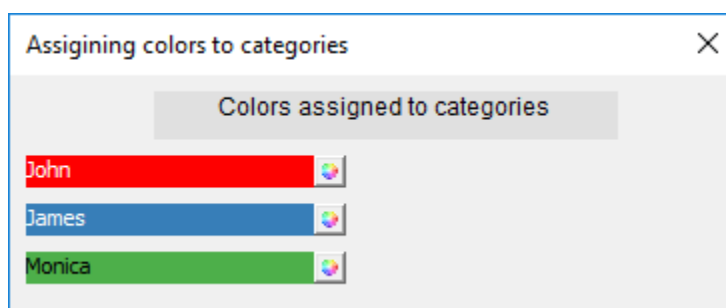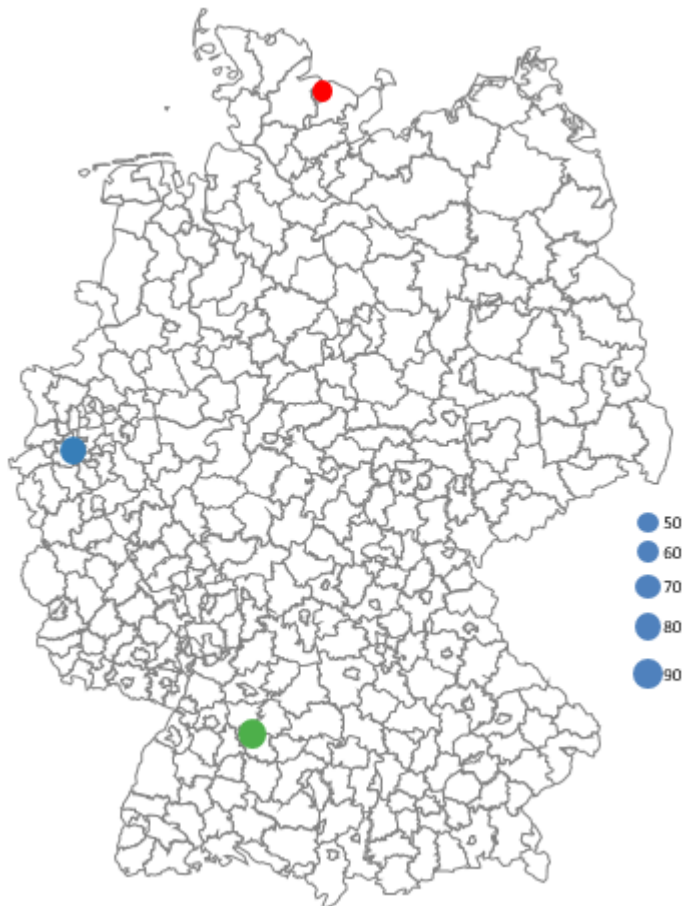
! In the software there exists only one legend – shared for a filled map and a bubble chart. If two legends are needed, then the easiest solution is to copy one of them and paste next to map as picture.

To refresh bubble color use command *Refresh.*

Remove colors
If bubble colors should be deleted, use command *Remove colors.*
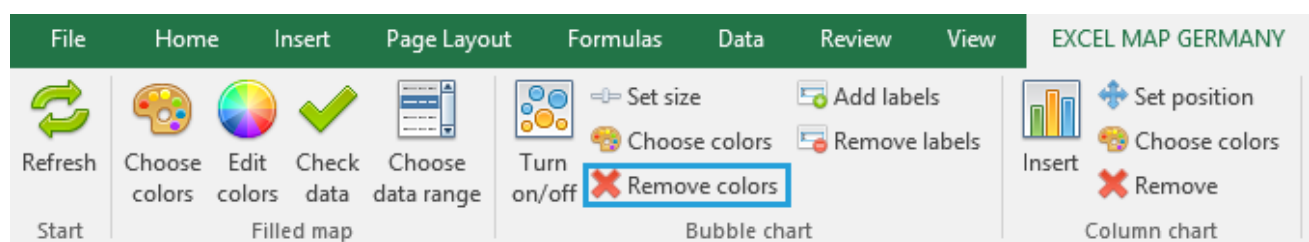
Add / Remove labels
The user can add text labels to bubble chart data points. Data labels come from column T *Data* sheet.

T
Labels
Kiel: 50
Hannover:
Düsseldorf: 80
Wiesbaden:
Mainz:
Stuttgart: 90
München:

© Maps-for-Excel.com / SkuteczneRaporty.pl
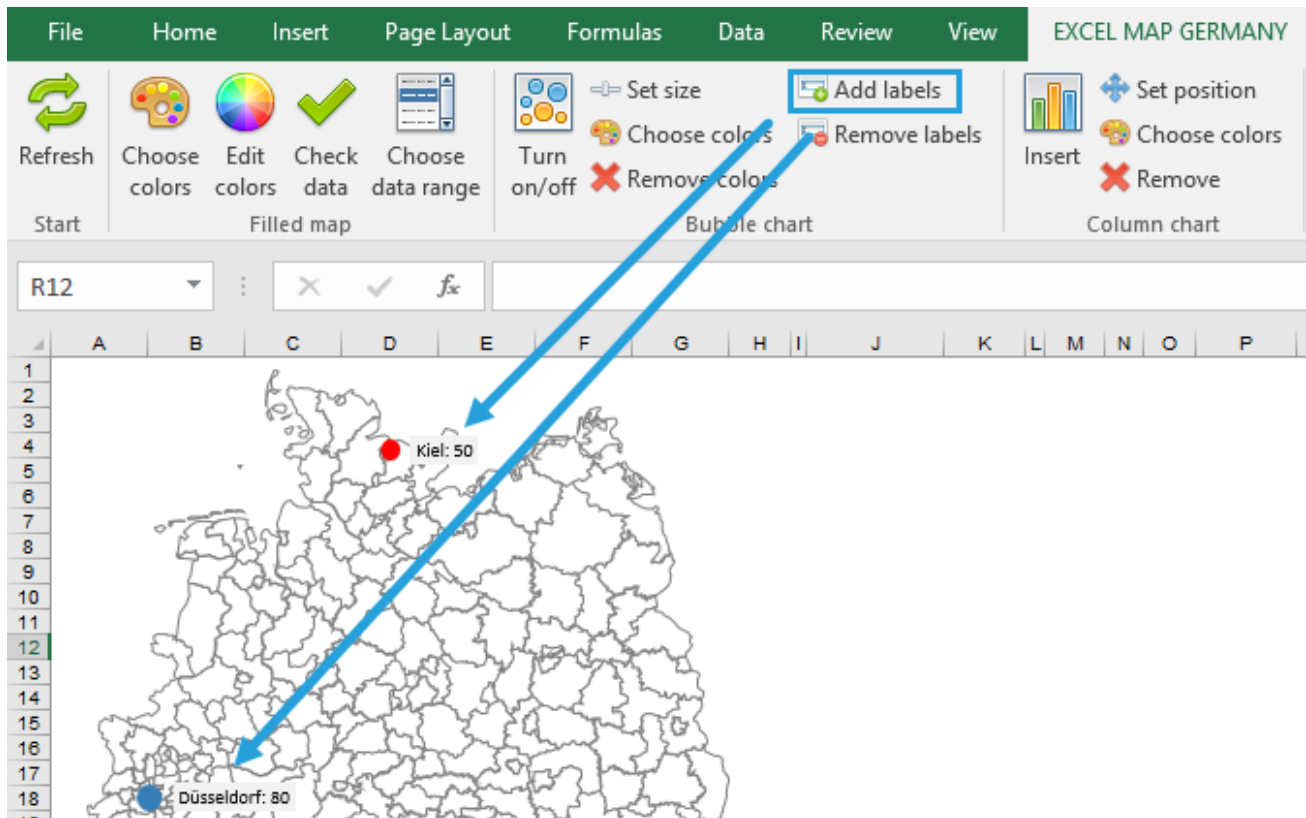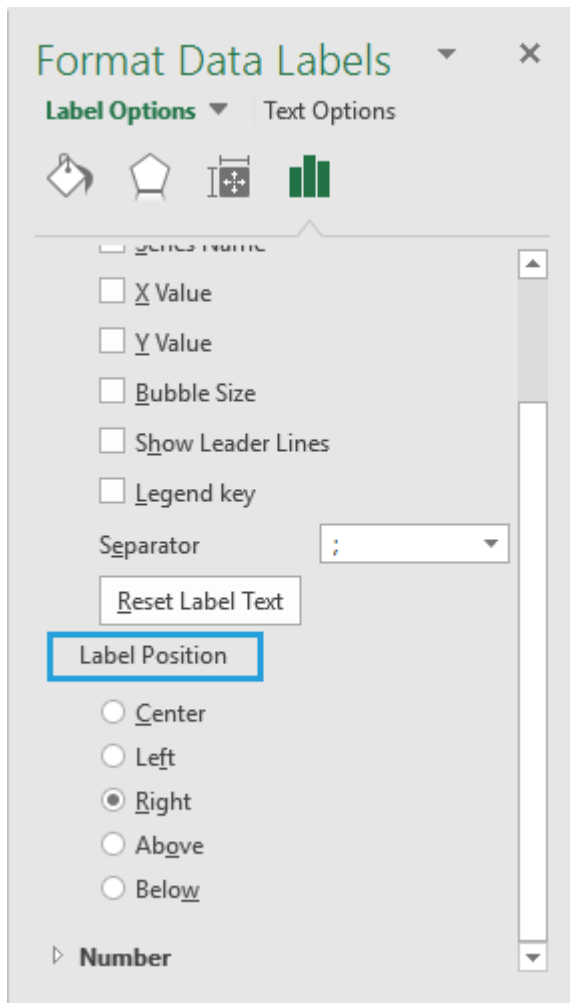
To delete label, select command *Delete labels.*

4.3. Column chart

The program allows user to create small column charts on the map. To insert such a chart, enter numeric values in columns J:S (maximum 10 series).

	F	G	H	I	J	K	L
Seat		Value	Bubble size	Bubble color	Smartphone	Tablet	Laptop
Ulm					22	26	67
Baden-Baden							
Biberach an der Riß							
Böblingen							
Friedrichshafen							
Freiburg im Breisgau							
Calw							
Emmendingen					44	82	57

Next select command *Insert.*
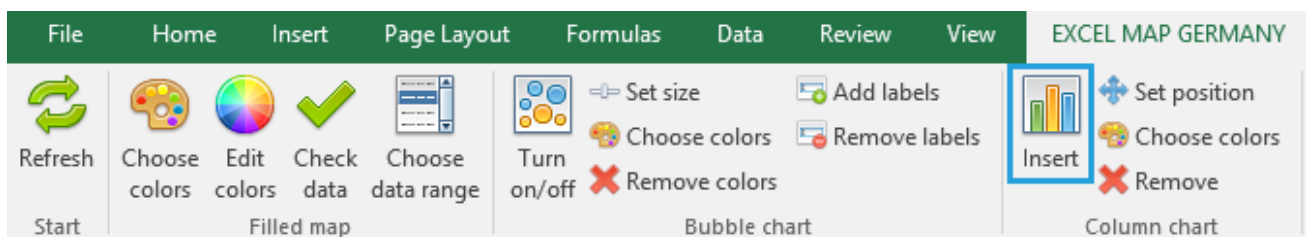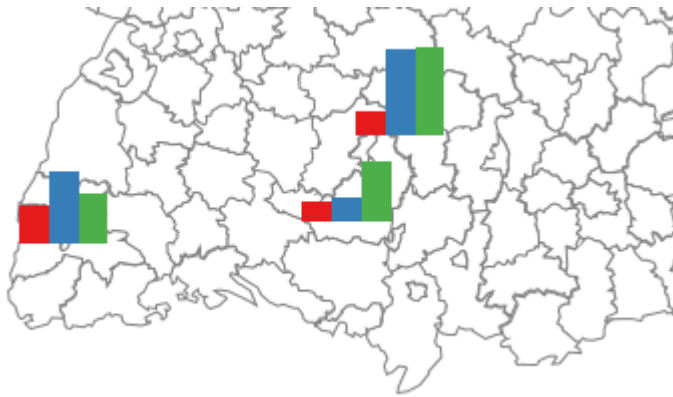
Set position
It is possible to move charts in groups or to change their size.

To save chart position (permanently), select *Save position* command in *Format* group.

Select colors

Bar chart colors can be changed by *Choose colors* command.

4.4. Pie chart

Similarly to a bar chart, user can create a pie chart.
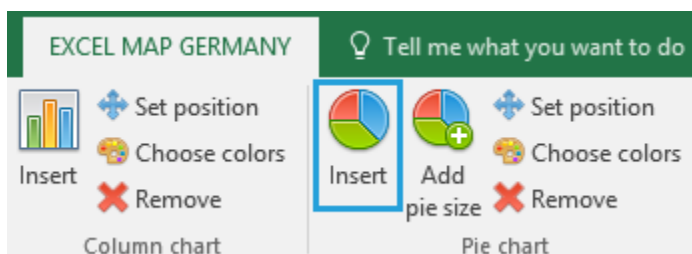
Extra command– *Add pie size* – can show not only percentage values, but also total amount as size.
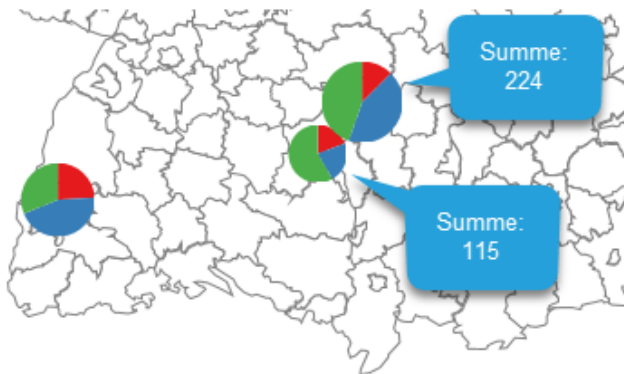
4.5. Postal codes (not available in all versions)

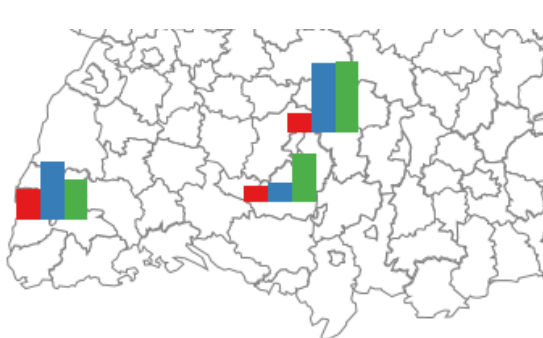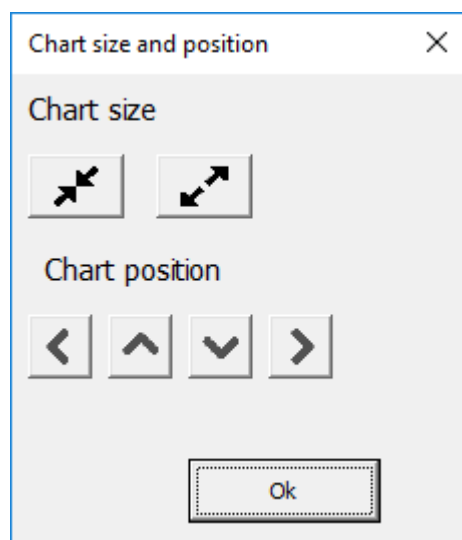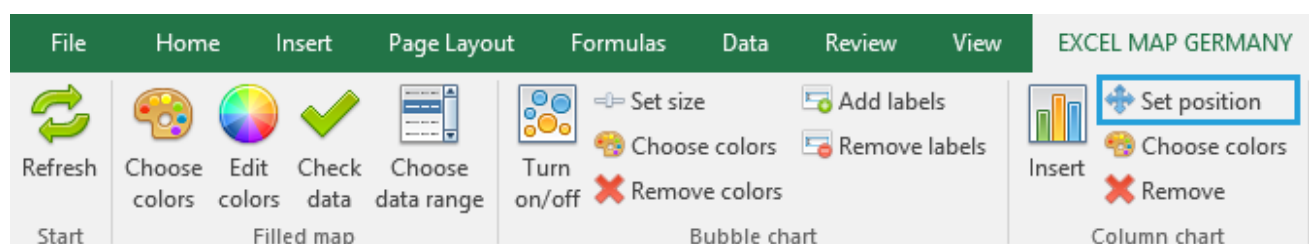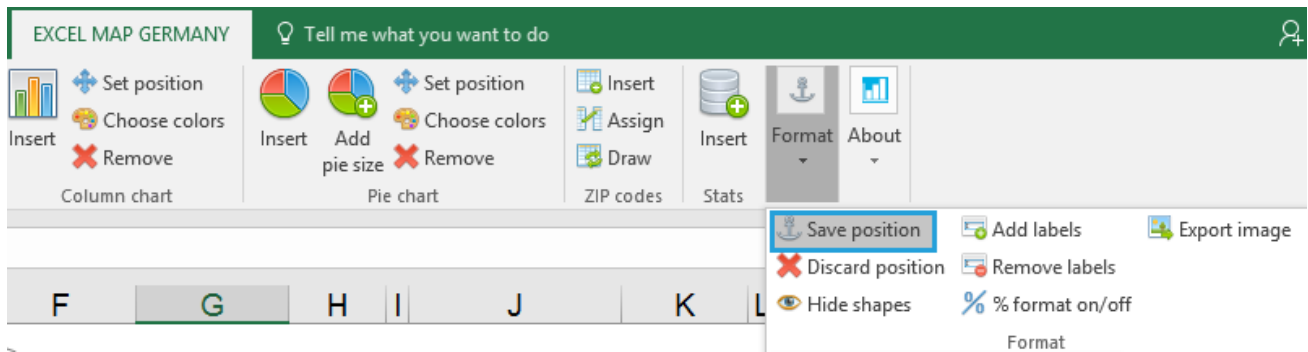The postal codes functionality makes it possible to visualize number values assigned to postal codes belonging to appropriate area (not present on all of the maps). The ZIP_Data table contains postal codes assigned to countries and districts.

In ZIP table columns A and B are designed to enter data, other ones are empty.

To make both columns visible use *Insert c*ommand.
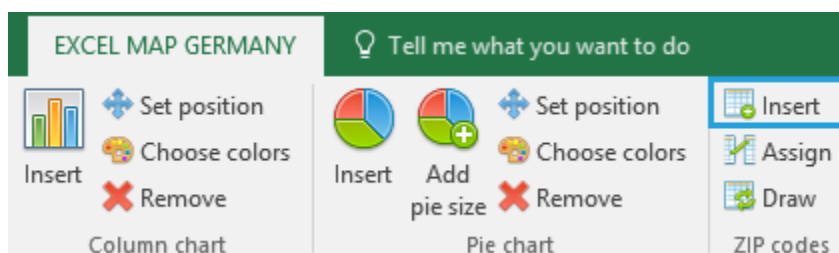
In next step go to ZIP table, enter the data to columns A and B and click *Assign.*

	A	B	C	D	E
1	Postcode	Value	ID	Administrative level 1	Administrative level 2
2	#N/A	37			
3	14557	56	Potsdam_Mittelmark	Brandenburg	Potsdam_Mittelmark
4	26936	18	Wesermarsch	Niedersachsen	Wesermarsch
5	4859	41	NordsachsenSachsen	Nordsachsen	Sachsen
6	97909	60	Miltenberg	Bayern	Miltenberg
7	86833	58	Unterallgäu	Bayern	Unterallgäu
8	67125	12	Rhein_Pfalz_Kreis	Rheinland_Pfalz	Rhein_Pfalz_Kreis
9	37444	40	Goslar	Niedersachsen	Goslar
10	91469	74	Neustadt_an_der_Aisch	Bayern	Neustadt_an_der_Aisch

The appropriate administrative unit will be assigned to postal codes, based on exact or approximate matching. Values in column B are summed for each country or district. The correct match is displayed in green, the approximate in yellow.

The values are summed in the *Data* sheet (sum is the only one available automate operation), and after specifying intervals you will see data on the map.

! After pressing *Draw*, values will be sent into the *Map* table. Each *Draw* pressing causes overwriting data in column G*.

Use *Draw* to refresh the map.
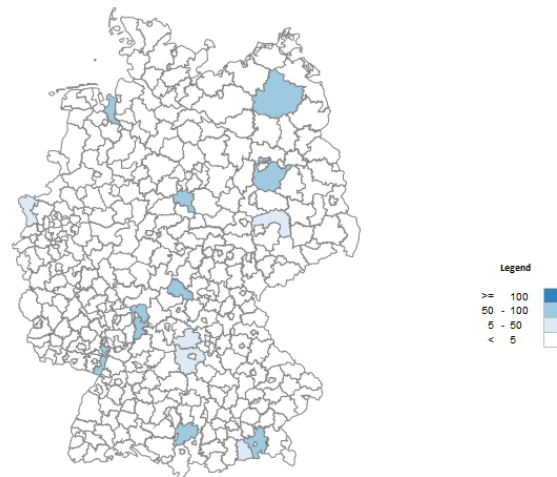
F Seat	G Value
Kiel	60
Hannover	131
Düsseldorf	30
Wiesbaden	
Mainz	143
Stuttgart	
München	480
Saarbrücken	
Potsdam	88
Schwerin	79
Dresden	9
Magdeburg	
Erfurt	

List of postal codes can be freely modified, by changing attribution or adding new postal codes. It is important to fill all columns according to the structure of sheet.

4.6. Indicators of the Federal Statistical Office (not available in all versions)

To expand the possibilities of interpretation, the data may be referred to data available in the Statistical Office. Basic indicators from the database of the Statistical Office were entered in table *Stats*. For example, the sales data can be divided by data contained in column D of the *Stats* table to calculate the sale per inhabitant.

	A Landkreis/Kreis/Stadt	B Type	Bundesland	D Population (2011)	E Area in km² (2011)	F Population density pro km² (2011)
1	Landkreis/Kreis/Stadt	Type	Bundesland	Population (2011)	Area in km² (2011)	Population density pro km² (2011)
2	Alb-Donau-Kreis	Kreis	Baden-Württemberg	189825	1357,32	140
3	Baden-Baden	Stadt	Baden-Württemberg	54500	140,21	388
4	Biberach	Kreis	Baden-Württemberg	189523	1409,82	134

The command *Insert* makes the table *Stats* visible.
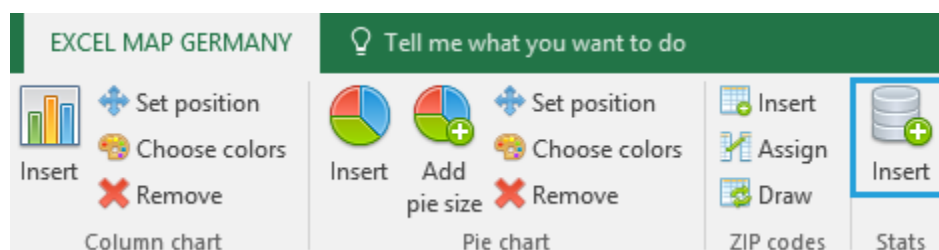
4.7. Formatting
The software contains few additional buttons connected with formatting.

Save position / Discard position

The operation lets the user to save his own column or pie chart position. It was in detail explained in point 4.3.

Hide shapes

To hide part of the shapes (ex. selected province), please insert in *Data* Sheet in column U value 0 next to selected unit. Then select command *Hide shapes.*

T	U
Labels	**Shape visibility**
Baden-Württemberg, Ulm:	0
Baden-Württemberg, Baden-Baden:	0
Baden-Württemberg, Biberach an der Riß:	0
Baden-Württemberg, Böblingen:	0
Baden-Württemberg, Friedrichshafen:	0
Baden-Württemberg, Freiburg im Breisgau:	0
Baden-Württemberg, Calw:	0
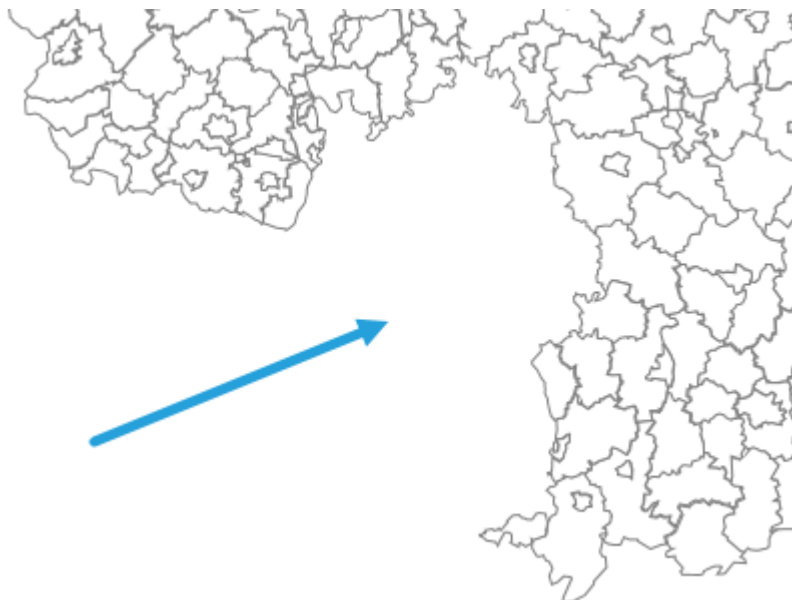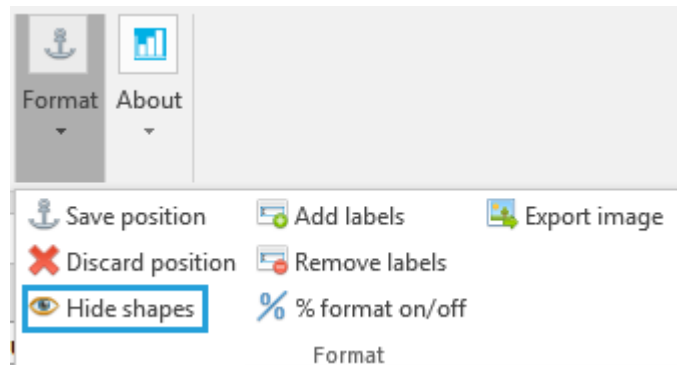
For example, all province shapes are hidden by default, but user can discover them, by changing parameter value in column U to 1 and pushing button *Hide shapes.*

T	U
Labels	**Visibility**
Kiel:	1
Hannover:	1
Düsseldorf:	1
Wiesbaden:	1
Mainz:	1
Stuttgart:	1
München:	1
Saarbrücken:	1
Potsdam:	1
Schwerin:	1
Dresden:	1
Magdeburg:	1
Erfurt:	1
Berlin:	1
Bremen:	1
Hamburg:	1

Add labels / Remove labels

There is a possibility to add text boxes on the top of the map, with text defined in column T sheet *Data.*

⚓ Save position 🖼 Add labels 🖼 Export image
❌ Discard position 🖼 Remove labels
👁 Hide shapes % % format on/off
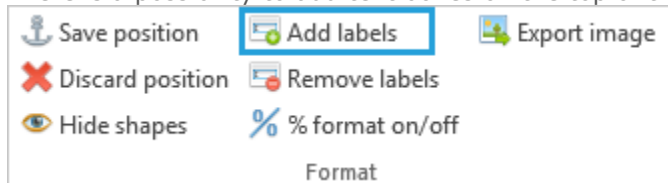
Format

After column T filling, select command *Add labels*

% format on/off

If map legend should have percent formatting, please select button *% format on/off.*
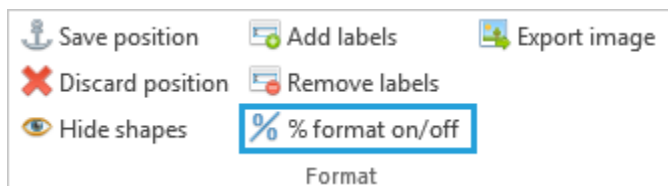
The program will ask about number of decimal places (ex. 0,1,2 etc). After filling text box and clicking *OK*, legend formatting will change to percent.
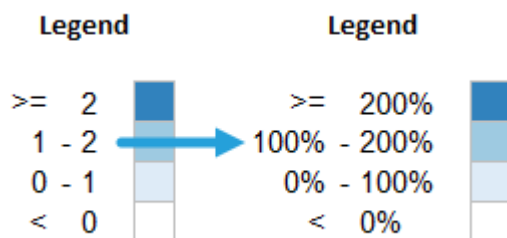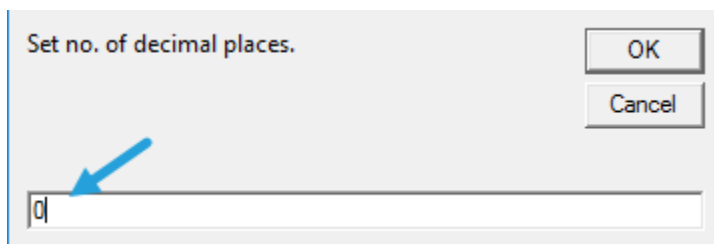
Export image

To save actual map as picture in PNG or JPG format, click *Export image* and select target file location, name and format.
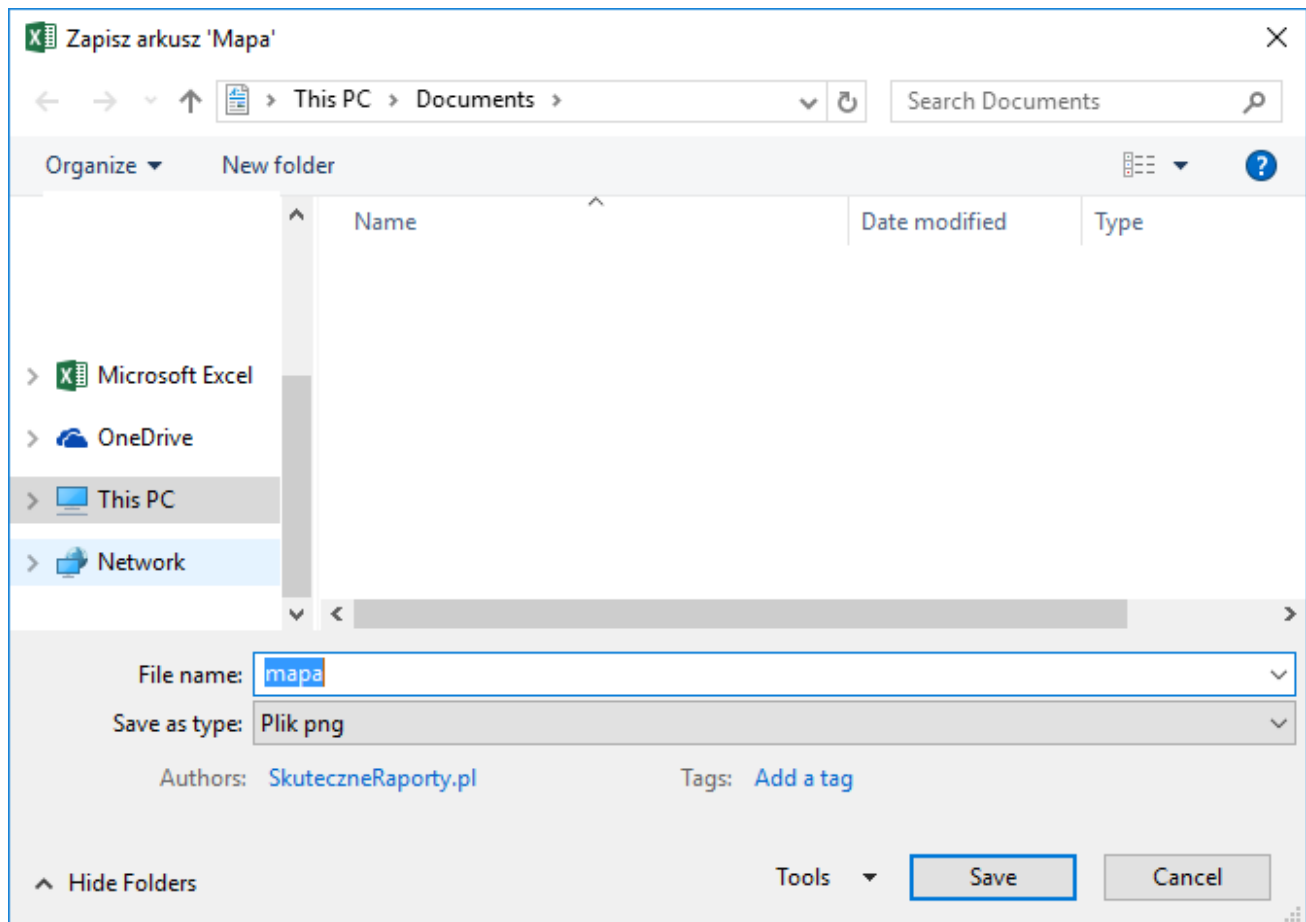
4.8. Connecting with pivot tables

Advanced Excel user can with success connect with pivot table and build interactive report connecting map with other charts, tables, and slicers. To automate map refreshing, with each update of pivot table placed in sheet *Map* (ex. by clicking on slicer) *Refresh* command is invoked, which updates map and bubble chart.

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5. Examples

Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20

Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20

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Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20

Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20

Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20

- 15
- 30
- 45
- 60

Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20

- 0,25
- 0,5
- 0,75
- 1

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Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20

- 0,25
- 0,5
- 0,75
- 1

Legend

>=	25
20 -	25
15 -	20
10 -	15
5 -	10
0 -	5
-5 -	0
-10 -	-5
-15 -	-10
-20 -	-15
<	-20

12,5

25

37,5

50

Microsoft Excel

Kreis: Altmarkkreis Salzwedel (Sachsen-Anhalt): 20,00

OK

Legend
>=   25
20 - 25
15 - 20
10 - 15
5 - 10
0 - 5
-5 - 0
-10 - -5
-15 - -10
-20 - -15
<   -20

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