**Data import and Vizualization**

# Explanation: In these exercise units, you will learn how to visualize your own data quickly and easily in REDE SprachGIS. You can make your own linguistic maps by importing space-related data sets. The data can be visualized for example as a pie chart map, a bar chart map or as a map with symbols or phonetic transcriptions.

# Unit 7 – Making a full form map

Imagine you asked people in 5 places how they pronounce the German word "Füße" (feet). You noted the variant that occurred most frequently in the location in an Excel sheet. Now you want to display your results on a map that shows the different pronunciations.

Task: Import an Excel file into REDE SprachGIS and visualize the data as a full form map.

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| 1. | Import data | First click on the "cloud icon" in the layer manager and drag the Excel file (Füße\_RVN) into the opened browser window of the REDE SprachGIS.  Alternatively: Open the file and copy the data into the tap "Text input". Then click on the button "Aktualisieren". |
| 2. | Checking the data to be imported | If your file already contains a column with GID, it will be detected automatically and the locations will be assigned accordingly.  If your file does not have GIDs, you will need additional information such as the coordinates to the locations.  In the Preview Table you can still adjust your data and, for example, deselect unneeded columns directly.  When you are satisfied with the settings and the locations are assigned to the corresponding system geometries (indicated by a green highlight), then click on the blue "Import data into map" button. You will then be prompted to enter a layer title for your layer (e.g. "Full form map"). Press the "Confirm" button. |
| 3. | Save layer as map | Save the map by clicking on "Save as user map" in the layer manager (Attention! The layer must be selected). Enter a name for the layer and click "Confirm". |
| 4. | Creating a full form map | Make sure that your saved data layer is selected and move the mouse into the map. Right-click in the map to open the context menu.  In the context menu, select the sub-item "Selection" > "Select all". Now all locations should be marked in red.  Go back to the context menu and select the sub-item "Labels". A submenu opens there that displays a tree structure in the upper area.  In this tree structure, open the "redeData" folder and there the "csvImport" subfolder.  In this folder, select the data field in which you have stored your full forms (pronunciation).  Then click on "Confirm" under the tree structure (there are two "Confirm" buttons, the upper one is the correct one).  Now the different pronunciations of the word "Füße" (feet) should appear in the locations. These labels can now be edited via the style editor. |
| 5. | Style | Go back to the context menu and select the "Selection" > "Select All" sub-item. Go back to the context menu and select the "Style" > "Edit Style" sub-item.  Adjust the labels so that they are easy to read. Tip: Black font with a white outline on a light background and white font with a black outline on a dark background are especially easy to see. |
| 6. | Save | Please make sure to save your changes by clicking on the disk in your active layer. |

# Unit 8 – Making a map with symbols

# Task: Visualize the already loaded data as a map with symbols.

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| 1. | Copy layer | Create a copy your data layer. To do this, select the layer in the Layer Manager and open the menu there by clicking on the three dots in the active layer. Select the "Copy" sub-item. Enter a name for the new layer, for example "Symbol map". |
| 2. | Save layer as map | Save the map by clicking on "Save as user map" in the Layer Manager (Attention! The layer must be selected). Enter a name for the layer and click on "Confirm". |
| 3. | Removing the labels | Since the new layer is a copy of the full form map, the labels are still shown there. To remove them, click in the map once again and select all via "Selection" > "Select all". Then open the "Labels" submenu in the context menu again. There you will find the option "Remove labels" as the last item. It is also a good idea to hide the layer with the full form map (via the eye next to the layer in the layer manager). |
| 4. | Show base map | Load your base map "RVN\_Project" into the Layer Manager (via "Favorites"). Use the drag&drop function to drag your "Symbol map" over your base map. |
| 5. | Creating a map with symbols | Make sure that your saved data layer is selected.  Open the tool “Visualization” via “Select tools” > “Visualization & Export”. There, select the tab “Visualization Symbols” (3rd tab, symbolized by a star).  Again, the data is organized in a tree structure. In the “Nominal Values (Text)” subtree, you should find your data with all variants. You can customize the color and icon for each variant or deselect variants. Clicking on “Visualize” will display the data as symbols on the map. In “Advanced options”, you can adjust the absolute size of the symbols. Each change must be confirmed by clicking on “Visualize”. |
| 6. | Playing around | Change the color and symbol assignment of the data. Deselect variants and select them again. Visualize the changes by clicking "Visualize" after each change. |
| 7. | Show legend | You can display the legend by clicking on the second tab “Legend” in the Layer Manager. |

# Unit 9 – Visualize distributions

# Imagine you asked 50 people in 5 places what language they speak. Your results are entered in an Excel sheet. Now you want to visualize these results in a frequency distribution.

# Task: Import an Excel file into REDE SprachGIS and visualize the distribution data contained in it as a pie chart.

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| 1. | Import data | Analogous to step 1 from unit 7 |
| 2. | Checking the data to be imported | Analogous to step 2 from unit 7 |
| 3. | Save layer as map | Analogous to step 3 from unit 7 |
| 4. | Create pie charts | Open the “Visualization” tool (via “Select Tools” > “Visualization & Export” > “Visualization”). Now switch to the pie chart (1st tab). In the tree structure you will now find the sub-item "Numerical values (numbers)" with the individual variant values. Here, too, the color can be set as desired. A click on "Visualize" then shows the distribution of the variants as pie charts at the locations. |
| 5. | Customize the visualization | In “Advanced options”, the absolute size of the pie charts can be adjusted or given a frame.  Each change must be confirmed by clicking on "Visualize". |

Homework:

Create your own small data set with about 5 locations. In an Excel sheet, write down the GID of the places, the place name and a value for each place. You can choose the value freely, e.g. lexical differences, morphological differences, different pronunciation, etc. Load your Excel sheet into SprachGIS and then visualize your dataset. You can choose between visualizing your data as a pie chart, as a bar chart, as a map with symbols or with labels.