User Manual - SIL Translations Mapping Tool

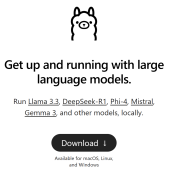
Step 1: Ensure the code downloaded and Python 3.12 installed on your machine. The main file to run is: 'MappingTool_SIL.py'.

Step 2: Import the following libraries

- Folium
- Requests
- Pickle
- Pandas
- Numpy
- Scipy.spatial
- Shapely
- Shapefile
- Geopy
- Matplotlib
- Lang2vec
- Sklearn
- Ollama

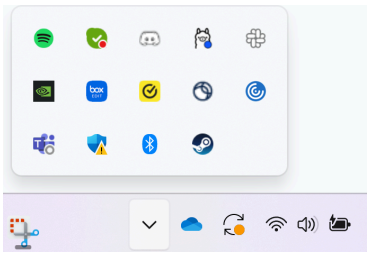
(You can use pip install <LibraryName> in the terminal window to do this)

Step 3: To download Ollama, please use the following link (https://ollama.com/) and click download from the site



Set up ollama on local machine by following instructions from here:
https://github.com/ollama/ollama/blob/main/README.md

There is a command ollama run llama3.2 that you can run in the command window to start the service. You can also check to see if Ollama is running by clicking on the Ollama icon in the bottom right of your computer once it's installed and running.



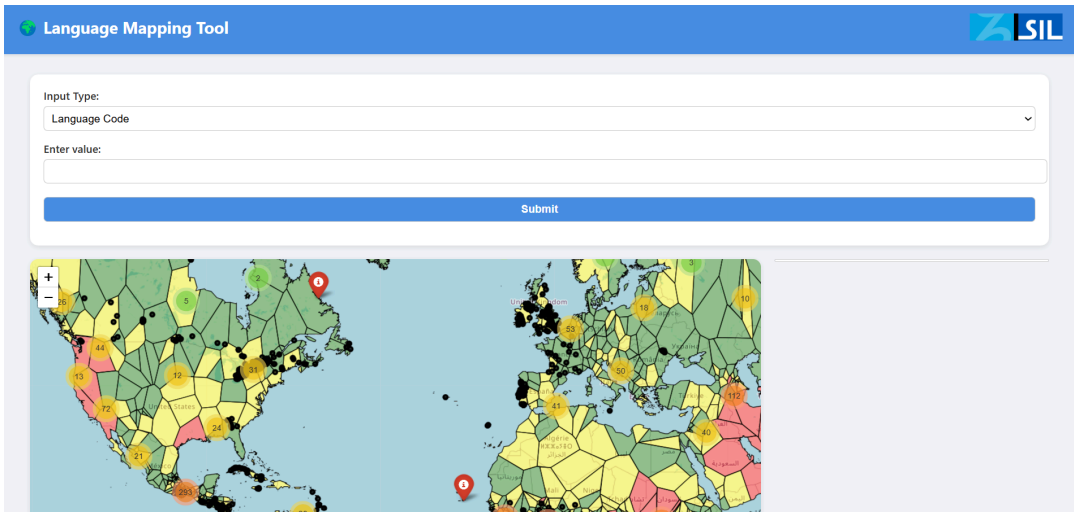
Step 4: Run the python file called 'Mapping_Tool.py' from your IDE of choice or the terminal. It will take around 10 minutes for the file to run the first time, this is because it will be creating the voronoi polygons in the first run and caching it. If the data source changes, make sure you delete the 'voronoi_cache.pkl' file before running so that new data is captured.

Step 5: Wait till the following text appears in your console

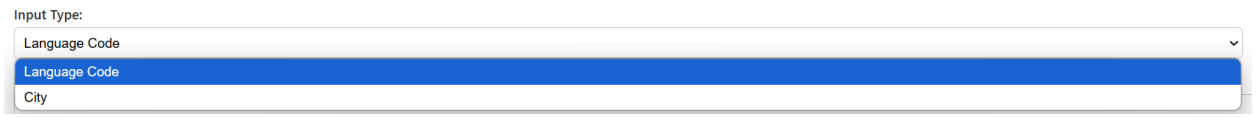
```
Starting Flask app...
 * Debugger is active!
```

Step 6: Open the following address on your browser: http://127.0.0.1:5000/

Step 7: Ensure that the tool loads as follows:



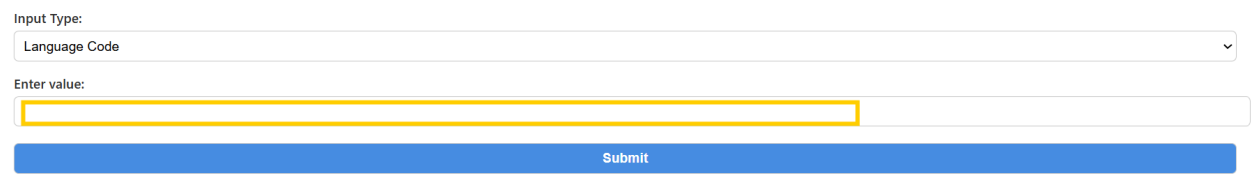
Step 8: Select the input type you wish from the dropdown list.



The tool has two options:

1. Language Code
2. City

Step 9: Enter the 3 letter Language Code or City name (in the box highlighted in yellow) based on your choice in Step 8.



Step 10: Click on the blue 'Submit' button

Step 11: The tool will then process your input and create the final output in the same screen. If you wish to see where the tool is at any particular time, you can look at the console.
For example, here the tool is compiling information regarding barriers to entry from the LLM:

```
127.0.0.1 - - [14/Apr/2025 12:03:36] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [14/Apr/2025 12:03:36] "GET /static/voronoi_language_map.html HTTP/1.1" 304 -
Fetching barriers to entry from LLM...
```

Step 12: The final output will load on the browser. Hover over Voronoi regions to check out the number of languages in the area and the overall translation ratio. Click on the green flag to the language similarity score (Between input language and closest translated language), driving time and distance, and driving time and distance to nearest church.