Problem Set 3 (CSS)

Due by 06/23/25

Download the official Leipzig shapefile (including the city districts) from the Leipzig Open Data Portal.

1. Mark and plot the following three locations on the map: *Your favorite bar*, *your favorite restaurant* and *your house* [1] (*2 Points*)
2. Calculate the straight-line distance (in kilometers) between your home and your favorite bar.(*1 Point*)
3. Use R to verify whether the three points you chose are located within the same neighborhood boundaries. (*1 Point*)
4. Identify the centroid (geometric center) of your restaurants neighborhood. Is your favorite restaurant more than 800 meters away from it? (*2 Points*)
5. Download the Migration statistics of Leipzigs neighborhoods from the Open Data Portal. Determine the ranking position of your home neighborhood in terms of *Innerstädtische Zuzüge* (i.e., people moving in from other parts of Leipzig). (*4 Points*)
6. Search the OSM-Wiki for how *Spätis* could be identified in Leipzig. Plot the identified Spätis on a map. (*5 Points*)
7. Determine which city district has the highest density of Spätis. (*2 Points*)
8. Create a 1 kilometer buffer around your home. How many Spätis are located within that buffer? (*1 Point*)
9. What are the potential limitations of the upper data collection and operationalization method in measuring Späti accessibility? (*3 Points*)
10. Assume each person visits the nearest Späti to their home. Determine which Späti has the largest catchment area. (*3 Points*)

[1] Feel free to make up locations if you're not comfortable sharing real ones or if you don't live in Leipzig. You can also use a different map area (e.g., Halle or Markkleeberg). This exercise is purely for practice purposes.