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Overview:
This tool is an interactive map showing where alumni of WashU's Otolaryngology program currently practice. Alumni are grouped by city - those in nearby cities are in a tooltip, ordered by graduation date. Those with an academic rank are indicated by a color to the left of their name in the tooltip.

Technical overview:
- **Tooltips are produced using the tippy.js plugin**
- **General map, bubbles, and visualization produced with d3.js visualization library**
- **Mapping zip code to nearest city is through turf.js geospatial analysis library**

Workflow to bucket alumni by city:
1. The latitude and longitude for the zip code listed for each alumnus is obtained through searching the us_postal_codes.csv file.
2. This lat/lon pair is then matched to the closest entry in the large city list using turf.js. If the match is more than 100km away, we don't want to include it (since it's likely a legitimately different city, rather than suburb. Don't want to over-sum alumni).
3. If the postal code is more than 100km away from any of the largest cities, we then match to a city in the small city list and a city/state pair is obtained for a zipcode.
4. The lat, lon, city, and state are then added as attributes to each alumni. D3.nest() then groups the alumni by unique city/state pairs so that city-specific tooltips can be created.

Files Needed in "map" folder in order for visualization to function:
- smallCities.js (list smalle cities and their info)
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- map.js (javascript to create map and interactivity)
- us_postal_codes.csv (list of zip codes to match on)
- us_states.json (shapes of US States, from which map is drawn from)
- graduates.csv (information on program's graduates, their zip codes, year, rank)
- index.html (actual webpage that hosts the visualization)

Columns currently being used to produce the map:
- "First name"
- "Last name"
- "Final Year in Residency Program"
- "Academic Rank: 0 if not ranked; …"
- "ZipCode"

Process to Prepare Excel Spreadsheet for Use in Map
- Open spreadsheet normally in Excel
- File > Save As > Format: "Comma Separated Values (.csv)", under Common Formats
- Save with name "graduates.csv", **all lower-case**. Accept though warning about saving only the Active Sheet and losing some of the functionality.
- Select Yes to overwrite previous "graduates.csv" file with new one we just produced.

Map script will continue to look for the "graduates.csv" file, but now it will find the updated file instead, and begin using that, thus showing updated data.

"graduates.csv" must be in the overall "map" folder (where current graduates.csv is located) for script to be able to find it and use it. If tool is hosted on WashU server, this might involve sending the new graduates.csv file to IT, and they will replace the old spreadsheet with the new one.