City Heatmaps for Tourists

(with Moscow city as an example application)

Business Problem

Problem Identify and clearly show the areas in the city that could be of interest to foreign visitors of the city (specifically for restaurants/food or potentially other things)

Audience Tourists and foreigners in the city that are interested in getting to know the city and finding the areas of interest

Why? Tourists could have limited time and they sometimes want a choice of good restaurants

Outcome Heatmap over the map of the city, highlighting the areas that would be of high importance for the tourist

Data

Foursquare location data:

- information about the main venues/places of interest
- convenient API
- rich and reliable dataset

Methodology

1. Mark the city with numerous spots (locations) that would be further evaluated and used in order to map out the heatmap
2. Make API requests for each of the spots to extract the popular venues in the vicinity and basic data about them
3. Process the acquired data and calculate the category of interest frequencies for each spot by first encoding the venue categories
4. Get the final datatable with all the spots and their scores (i.e. weights) of concentration of places of interest for tourists
5. Create a heatmap using the spots' scores by highlighting the zones that have higher score (and concentration).

Location points for scoring plotted over Moscow city

```
map_out_coordinates(coordinates)
```
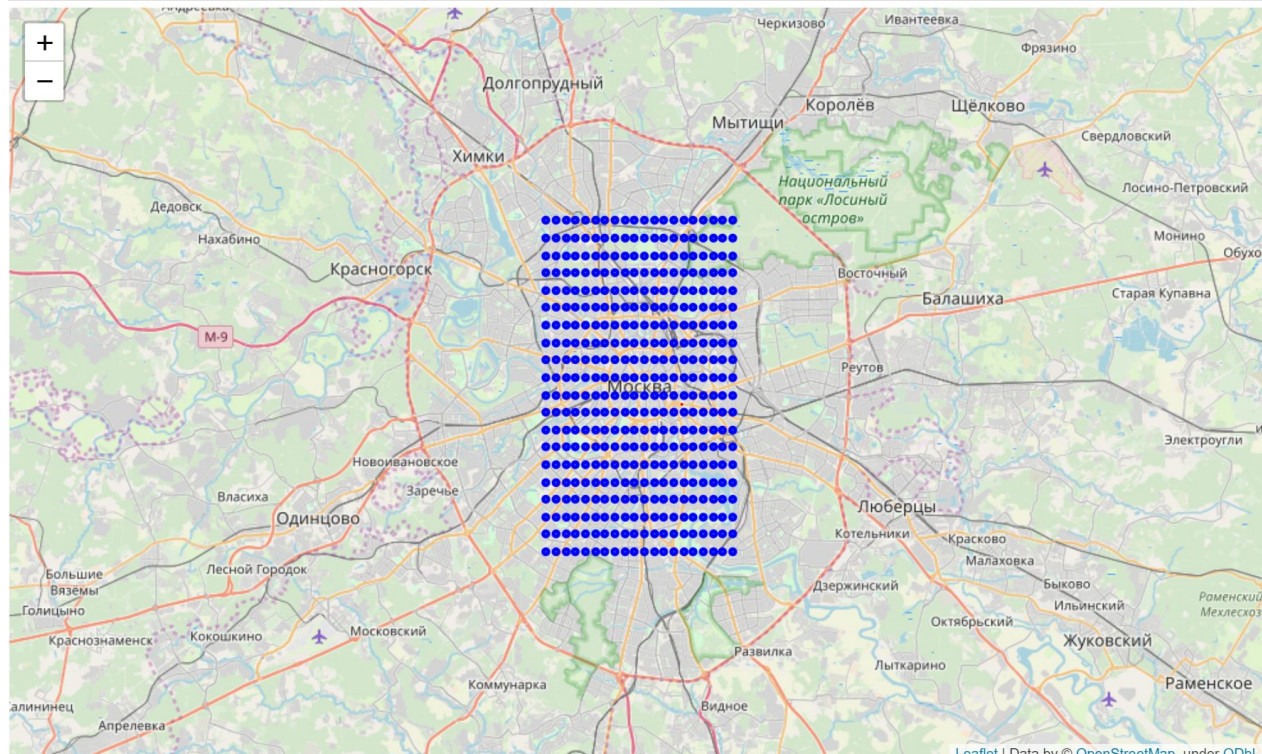
Resulting HeatMap that clearly highlights places with high concentration of restaurants and places for dining

```
map_out_scores(scores)
```

Out[373]:

Results

- Places of great interest to time-constrained tourists
- Clear blobs with high concentration right in the city centre of Moscow
- Radial natural structure of the city with the inner core and gradually less concentration of venues as we move outside.
- Peculiar spots not specifically in the centre of the city

The process can be applied on any other city and practically other categories (e.g. parks, etc.)

Discussion

- Reviews the customers have left for the venues - producing more precise areas of interest for the tourists, taking into account the reviews about the places around the locations.
- Comparing the results with the Google Maps' own highlighter

Thank You!