

# Research and Innovation

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## Abstract

The aim of this project is to find and visualize the events posted on Meetup.com in different cities in order to analyze the density of planned activities and to make a social study regarding typical meeting times and most usual activities and interests. One aspect may concern different meeting times in Spain and Germany or group size. We will focus our research on cultural activities like languages tandems and sports. The data shall be obtained via the Meetup-API and OpenStreetMap. The most important data source for this project is the Meetup-API where we have to request the events with different Python packages like “requests” or “meetup-api”. Our second task is to visualize the locations of the events on a given city map obtained by data resources like OpenStreetMap. To plot the locations we could use “matplotlib” or similar Python plotting libraries. One further aspect could be to look for interest of twitter users to make recommends to activities nearby. The geotag of the tweets provides the central information for the search.

## Contents

<b>1</b>	<b>Summary and Goals</b>	<b>2</b>
<b>2</b>	<b>Data Life-Cycle</b>	<b>2</b>
<b>3</b>	<b>Tools and Data</b>	<b>2</b>
3.1	Tools . . . . .	2
3.2	Data . . . . .	2
<b>4</b>	<b>Results</b>	<b>3</b>

5	Legal and Ethical Issues	3
6	Limitations and Future Work	3

# 1 Summary and Goals

# 2 Data Life-Cycle

# 3 Tools and Data

## 3.1 Tools

The main work for our project was done in the Python programming language in version 3.6 [7]. The most notable used Python libraries where requests [3], gmaps [6], Jupyter [4] and matplotlib [2]. The requests package was used to call and request data from the Meetup API [5].

With Jupyter Notebook and gmaps we were able to plot the obtained data from the Meetup API, Wikipedia and other resources in a browser. In detail Jupyter provides the general browser session functionality whereas gmaps extends Jupyter with an interactive map provided by Google Maps [1]. One can visualize specific points or areas in various colors and densities to create meaningful maps. Matplotlib was used to transform the data from population density into specific color schemes.

## 3.2 Data

As already noted we used the following data sources:

- Meetup API: To get the events in the examined cities.
- Wikipedia: For obtaining data about the population density of the cities and their districts.
- Various resources for GeoJSON files: To visualize districts onto Google Maps. **TODO**
- Google Maps: As a general back-end for our visualization.

## 4 Results

## 5 Legal and Ethical Issues

## 6 Limitations and Future Work

## References

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