T3 Report

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In the final task for the IA369 discipline, the Safety Radius interactive visualization was built. The goal of this interactive visualization is to allow the user to check if the surroundings of a given point of San Francisco are safe, places to be careful or dangerous. To allow this application to work, the San Francisco Police Department Incidents of 2016 dataset was used.
The user profile for this webapp are tourists new to San Francisco that want to make sure they have a general knowledge of which places are dangerous for them. Regarding this subject, since we are focusing on tourists, crimes like burglary and forgery of documents were not considered.
The project was conducted using HTML/CSS/Javascript and Python. The choice of web technology made sense since the solution uses a Google map and should be of easy access for the public. Python was used to prepare the police incidents data in a Jupyter notebook. Python was chosen because it is a scripting language easy to perform data munge.
Making a critical analysis to the project, the main issue was the author unfamiliarity with web technology. The author has never programmed an application using HTML/CSS/Javascript and this made him to choose feasibility over best practices and scalable solutions. As the first problem, javascript cannot read local files, due to a security design that prevent it from doing so. Therefore, loading prepared crime data in a proper manner would require access to a backend database. The author choose to take another approach on the matter, but this choice will not scale when more cities start to supply their data for the webapp.
Another major point of discussions is how to estimate crime based on the data. In the application, a simple count of the number of crimes inside the safety circle was used. This was enough for a proof of concept, but will not be satisfying for a final version. The next version will need to make a better estimate of the danger zones and take into account that other datasets of police department incidentes may not have as much detailed information as the one we are currently working with.
Regarding platform, ideally this project should be made for mobile. The choice for webapp over mobile was also due to the unfamiliarity of the author in developing for both platforms and choosing to build the proof of the concept in the easiest one. Testing the solution in the browser of smartphones of a few friends, the application received positive feedback in terms of interaction. Nevertheless, it was clear that the layout was not that good in a mobile phone screen as it is on a computer screen. Moreover, in the mobile version other functionalities will need to appear. For example, locate the user using GPS and plotting the safety radius around him in real time. This is not hard to add to the solution in terms of complexity and will appear in the mobile version, should it exist.
Regarding a filter tool for crimes, although it is a simple feature to add in technical terms, it is hard to set what filters should appear for the user. One suggestion that is being debated among the members of the Walking Safe team is to classify a crime severity with the labels: light, middle and severe (e.g. rape is a severe crime, while prostitution is a light one). Once the members of the group reach in a

consensus of how we should separate the crimes, the filter will be added. As for now, it seems like a useless features that will only confuse the user.
Finally, regarding update of the data, it is possible to automate the process to fetch new datasets, as they appear. However, this is not a critical requirement for now, because datasets take some time to update, and working with deprecated data is not a deal breaker for this application.