Case Study 1 - International Conflicts Dashboard

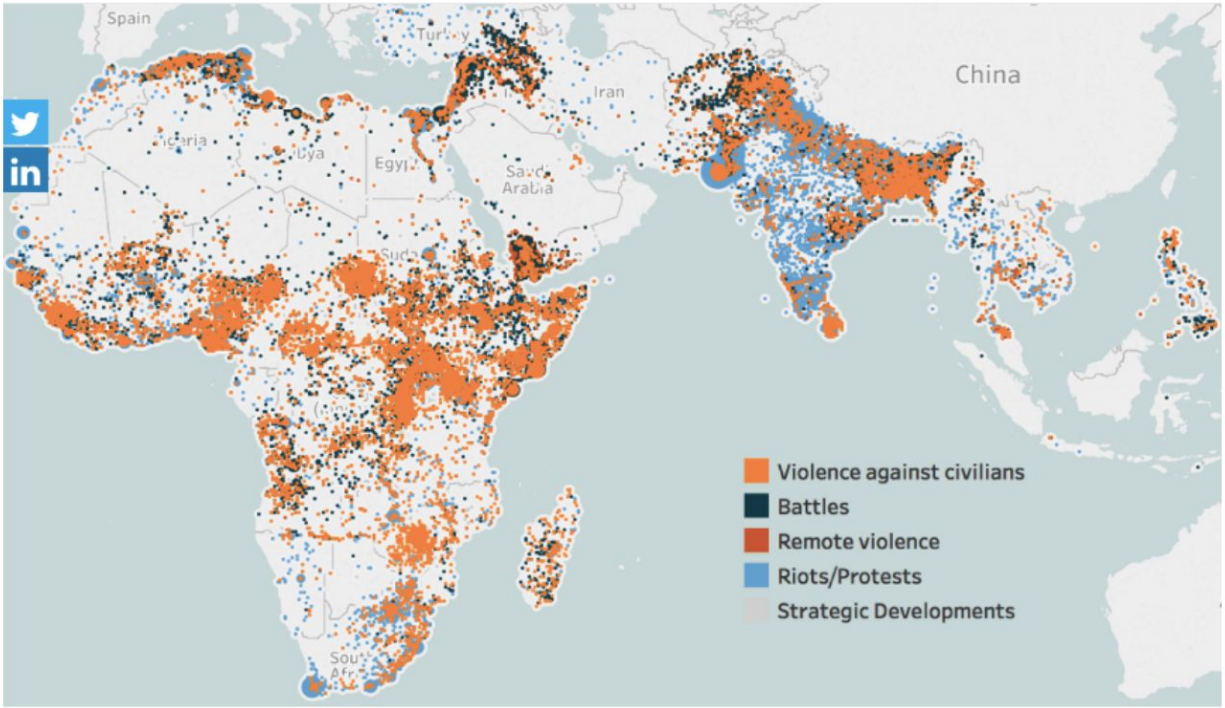
Client: You have been approached by the United Nations in New York City to create an **interactive dashboard** for their internal department that studies world-wide conflicts. These are political scientists that are well equipped to analyze the data, but that do not have the visualization skills to create an effective dashboard.

Goal: Create an interactive dashboard that gives an overview of world-wide conflicts and that allows expert users to drill down into the details of individual conflicts for exploratory data analysis. Your task is to highlight interesting facets of the data and provide effective filtering techniques to facilitate exploration.

The main criteria for your dashboard are:

- Convey as much of the information in the dataset as possible
- Allow expert users to interactively explore the data
- Give an overview and enable drill-down into details

Previous visualization: An intern has create this initial static visualization, but the UN is looking for a more sophisticated interactive dashboard.



Data: UN-conflicts.csv

Data fields:	Example
Iso: integer	466
Event_id_cnty	MLI2170
Event_id_no_cnty	2170
Event_date: date	2018-07-28
Year: date	2018
Time_precision: integer	1
Event_type: string	Violence against civilians
Actor1: string	FLM: Macina Liberation Movement
Assoc_actor_1: string	[no data]
inter1: integer	3
Actor2: string	Civilians (Mali)
Assoc_actor_2: string	[no data]
Inter2: integer	7
Interaction: integer	37
region: string	Western Africa
country: string	Mali
admin1: string	Mopti
admin2: string	Mopti
admin3: string	Fatoma
location: string	Koundioli
Latitude: decimal	14.595
Longitude: decimal	-3.8739
Location_2: geopoint	POINT(-3.8739 14.595)
Geo_precision: integer	1
Source: string	Whatsapp
Source_scale: string	other
Notes: string	On July 28, presumed Katiba Macina militants abducted the village chief of Koundioli.
Fatalities: integer	0

Case Study 2 - Volcano Eruptions Website

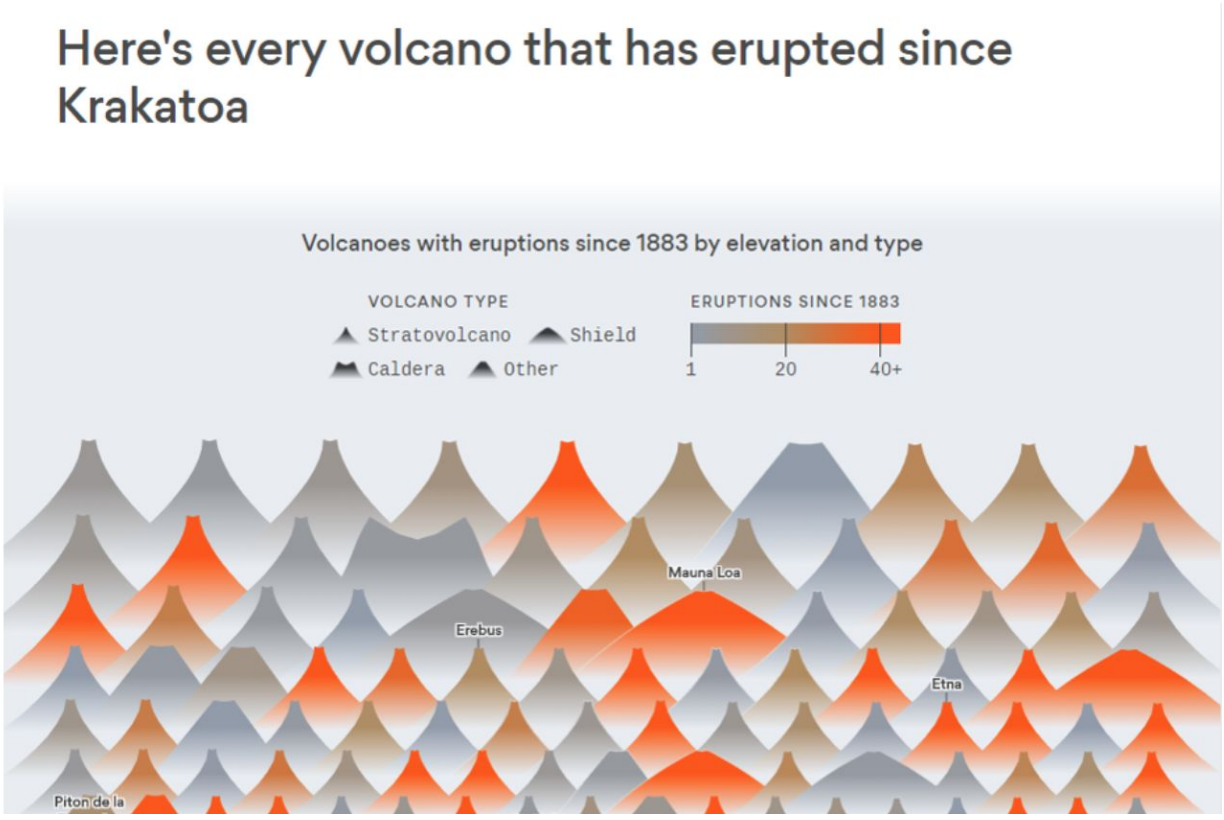
Client: The National Geographic society hired you to create **interactive visualizations on their website** about volcano eruptions. The dataset contains information on every volcano eruption in the world since 1883.

Goal: Create prototypes of engaging interactive visualizations that are aimed at the interested general public. National Geographic wants to convey the facts and numbers, however, the visualizations need to be engaging enough to capture the interest of their typical audience.

The main criteria for your visualizations on their website are:

- Accurately convey the facts about volcano eruptions in the data
- Well designed and engaging, ideally revealing some surprising facts
- Appropriate messaging with interesting titles, captions, and annotations

Previous visualization: A design consultant created an initial prototype shown below. While visually pleasing and engaging, it does not support interactive filtering and may be a bit too abstract for an interested reader.



Data: volcano_eruptions.xlsx

Data fields:	Examples:
Volcano_number: integer	211020
Volcano_name: string	Vesuvius
country: string	Italy
primary_volcano_type: string	Stratovolcano
activity_evidence: string	Eruption observed
last_known_eruption: string	1944 CE
region: string	Mediterranean and Western Asia
subregion: string	Italy
Latitude: decimal	40.821
Longitude: decimal	14.426
Location: geopoint	POINT(14.426 40.821)
Elevation_m: integer	1281
Dominant_rock_type: string	Phono-tephrite / Tephri-phonolite
Tectonic_setting: string	Subduction zone / Continental crust (>25 km)

Case Study 3 - Health Data in NYC

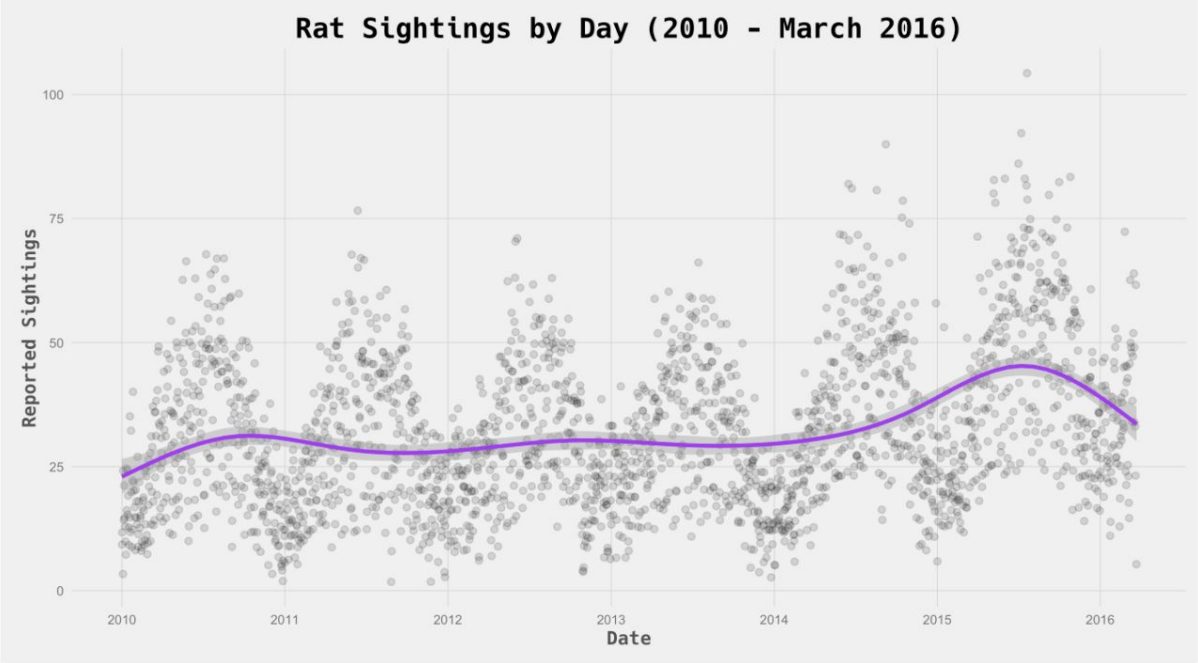
Client: The Health Department of the city of New York wants to publish **interactive visualizations on their website** on rat sightings as part of their annual health report to the public. The commissioner on rodents and marsupials has pushed for this for years and created a large dataset. She created an initial visualization, however, she wants something more informative than just a scatter plot.

Goal: Create several interactive visualizations that show where rat sightings are most common. Users should be able to explore the dataset, but you can choose which aspects you want to highlight in your messaging.

The main criteria for your visualizations on their website are:

- Accurately convey the facts about rat sightings in the data
- Highlight aspects of the data that might be interesting or surprising
- Informative titles, captions, and annotations

Previous visualization: Created by the commissioner herself, this initial visualization shows the average number of rat sightings over time. However, it is a bit unprecise (e.g., average number of sightings per week/day/month?) and should only serve as an initial starting point.



Data: rat_sightings.csv

Data fields:	Examples:
Address_type: string	ADDRESS
agency_name: string	Department of Health and Mental Hygiene
agency: string	DOHMH
borough: string	MANHATTAN
city: string	NEW YORK
Closed_date: datetime	2013-08-30T00:00:00
community_board: string	10 MANHATTAN
complaint_type: string	Rodent
Created_date: datetime	2013-05-09T00:00:00
cross_street_1: string	WEST 113 STREET
cross_street_2: string	WEST 114 STREET
descriptor: string	Rat Sighting
Due_date: datetime	2013-05-10T16:36:00
facility_type: string	N/A
incident_address: string	2098 8 AVENUE
Incident_zip: integer	10026
intersection_street_1: string	[no data]
intersection_street_2: string	[no data]
landmark: string	[no data]
Latitude: decimal	40.80279815
location_type: string	3+ Family Apt. Building
Longitude: decimal	-73.95654015
Location: geopoint	POINT(-73.95654015 40.80279815)
park_borough: string	MANHATTAN
park_facility_name: string	Unspecified
Resolution_action_updated_date: datetime	[no data]
status: string	Pending
street_name: string	8 AVENUE
Unique_key: integer	26264065