

Project 2 Proposal – Tsunami Dashboard

Group NoFloods team members

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GitHub Link

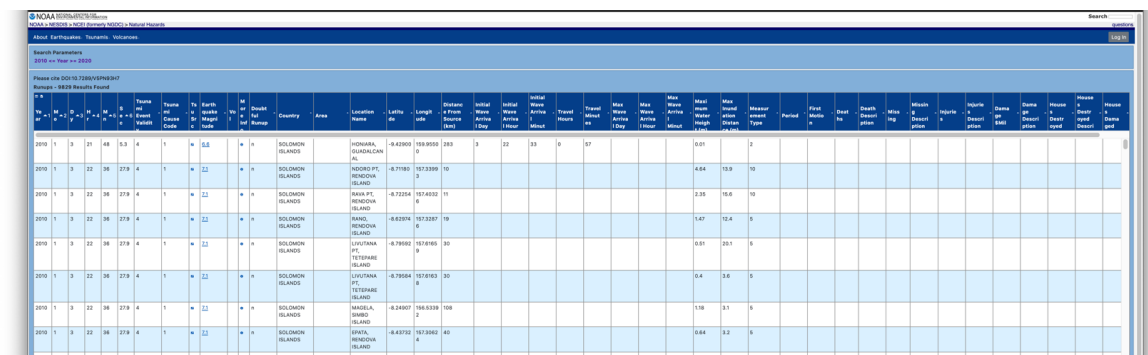
<https://github.com/Roopa-16/Project-Data-2>

Introduction

We are interested in developing a dashboard to visualize tsunami data for events that occurred during different periods of time. We chose tsunamis because most natural disaster dashboards focus on earthquakes. While tsunamis are usually caused by earthquakes, we thought it would be interesting to look at data that is tsunami-specific, including how far away effects were observed compared to the source location, water height, injuries, and damages.

Link to Data Set

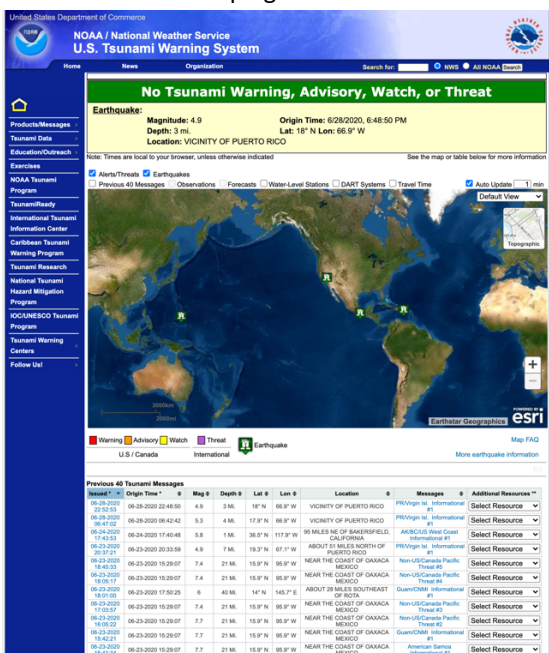
Tsunami data is available on the National Oceanic and Atmospheric Administration (NOAA) website: <https://www.ngdc.noaa.gov/hazel/view/hazards/tsunami/runup-search/>



The screenshot shows the NOAA Hazards Search Results page for Tsunami Runup Data. The search parameters are set to "Tsunami Runup" and "All Hazards". The results table displays 10 rows of data, each representing a tsunami event. The columns include: Year, Month, Day, Time, Magnitude, Depth, Location, Latitude, Longitude, Distance from Epicenter, Initial Wave Height, Maximum Wave Height, Maximum Runup, Maximum Inundation, Maximum Damage, and Maximum Casualties. The data is sorted by Year, with the most recent events at the top.

Year	Month	Day	Time	Magnitude	Depth	Location	Latitude	Longitude	Distance from Epicenter	Initial Wave Height	Maximum Wave Height	Maximum Runup	Maximum Inundation	Maximum Damage	Maximum Casualties
2018	1	21	14:55	5.3	10	HONOLULU, HAWAII	21.3	-157.8	100000	10	10	10	10	10	10
2018	1	21	14:55	5.3	10	HONOLULU, HAWAII	21.3	-157.8	100000	10	10	10	10	10	10
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2018	1	21	14:55	5.3	10	HONOLULU, HAWAII	21.3	-157.8	100000	10	10	10	10	10	10

We are also web scraping the latest tsunami warning, advisory, watch, or threat headline from <https://www.tsunami.gov/>

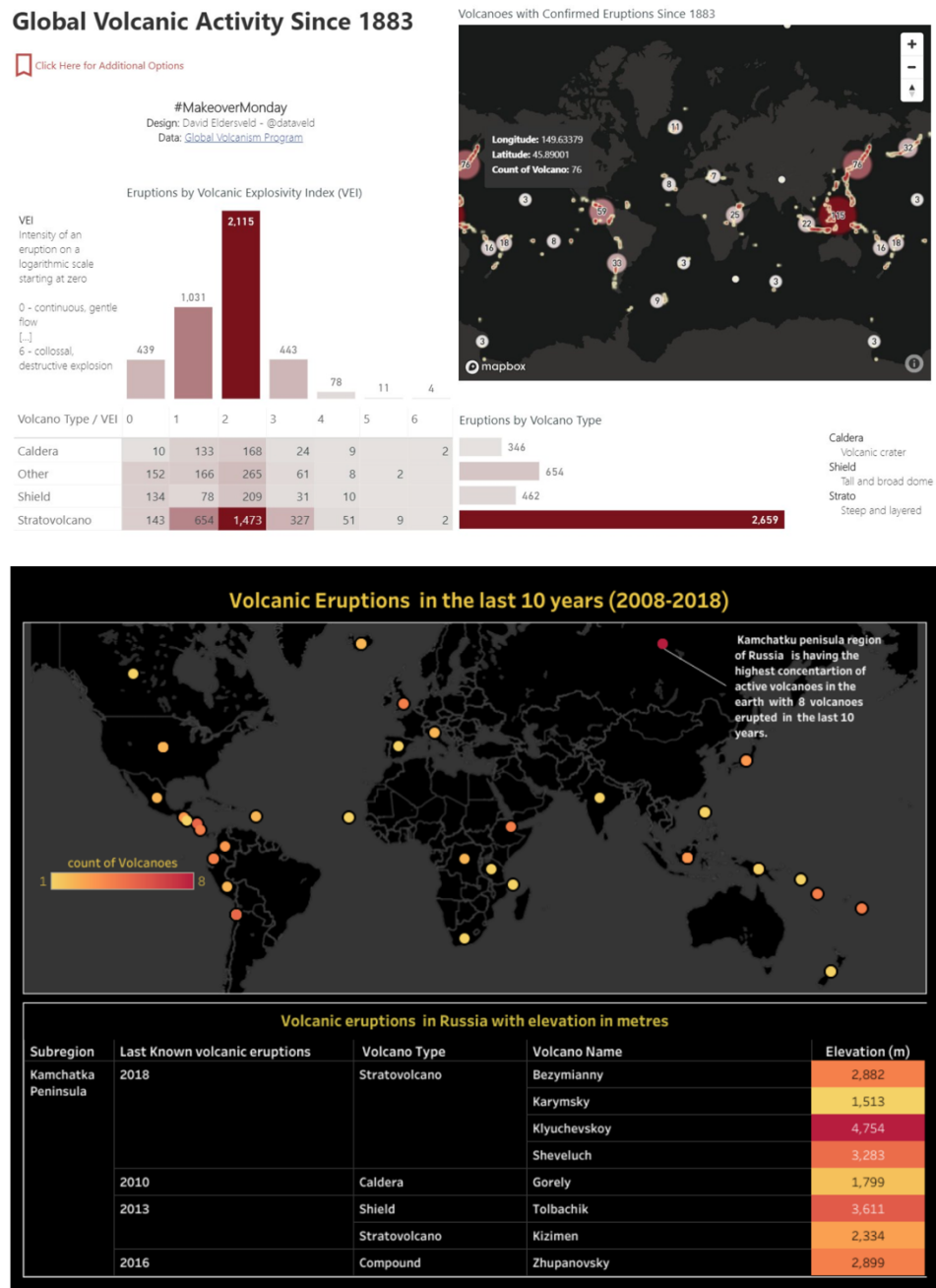


The screenshot shows the NOAA National Weather Service U.S. Tsunami Warning System website. The main heading is "No Tsunami Warning, Advisory, Watch, or Threat". Below this, there is a section for "Earthquake" with details: Magnitude: 4.9, Depth: 3 mi., Location: VICINITY OF PUERTO RICO, Origin Time: 6/28/2020, 6:48:50 PM, Lat: 18° N Lon: 66.9° W. The page also features a map of the Pacific Ocean showing the location of the earthquake. On the left side, there is a sidebar with links to various tsunami-related programs and resources. At the bottom, there is a table of "Previous 40 Tsunami Messages" with columns for Date, Origin Time, Magnitude, Depth, Location, and Messages.

Date	Origin Time	Magnitude	Depth	Location	Messages
06-28-2020	06:48:50	4.9	3 mi.	VICINITY OF PUERTO RICO	10
06-28-2020	06:42:42	5.3	4 mi.	VICINITY OF PUERTO RICO	10
06-28-2020	06:40:48	5.8	1 mi.	ABOUT 50 MILES NORTH OF PUERTO RICO	10
06-28-2020	06:39:58	6.8	1 mi.	ABOUT 50 MILES NORTH OF PUERTO RICO	10
06-28-2020	06:39:07	7.4	21 mi.	NEAR THE COAST OF GUATEMALA	10
06-28-2020	06:38:07	7.4	21 mi.	NEAR THE COAST OF GUATEMALA	10
06-28-2020	06:37:07	7.4	21 mi.	NEAR THE COAST OF GUATEMALA	10
06-28-2020	06:36:07	7.4	21 mi.	NEAR THE COAST OF GUATEMALA	10
06-28-2020	06:35:07	7.4	21 mi.	NEAR THE COAST OF GUATEMALA	10
06-28-2020	06:34:07	7.4	21 mi.	NEAR THE COAST OF GUATEMALA	10

Screenshots of Inspiring Visualizations

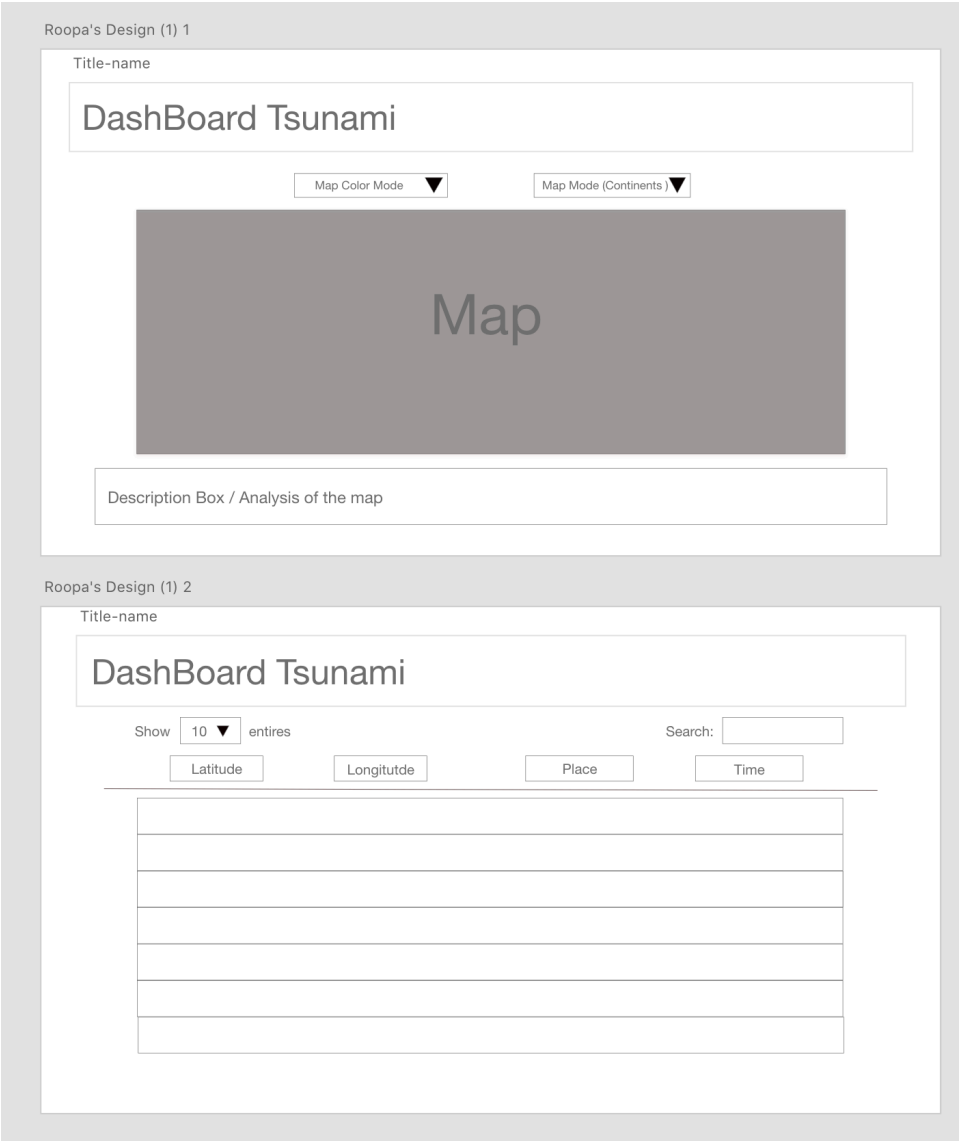
We were inspired by these visualizations, especially these volcanic activity-related dashboards:



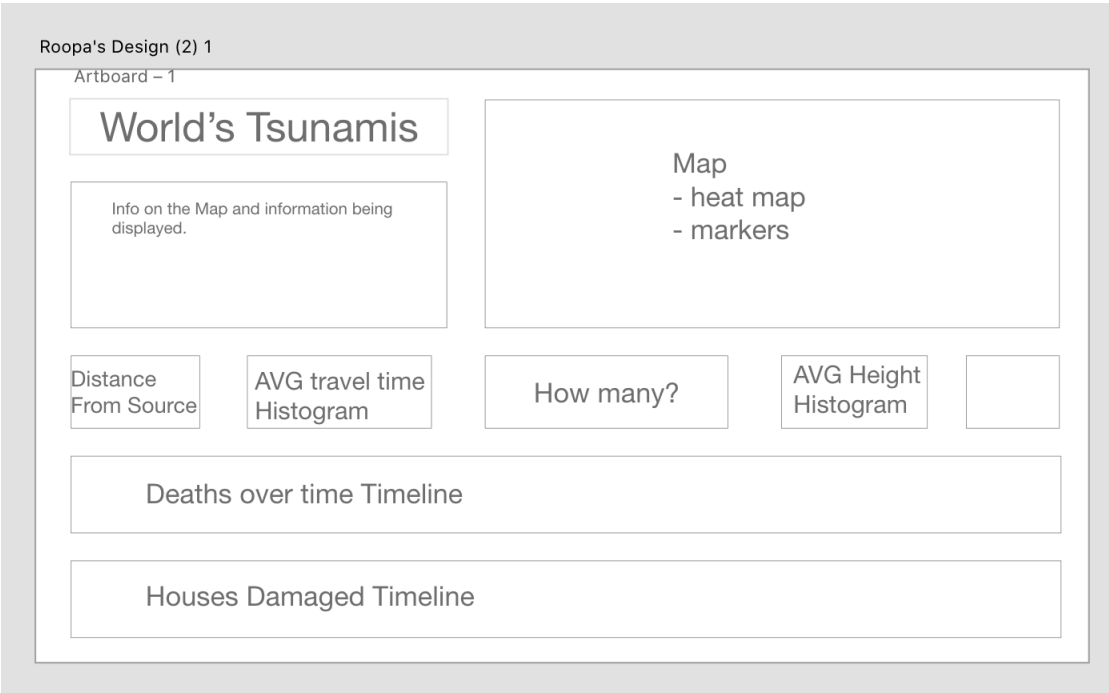
Tsunami Event

Date						Tsunami Cause		Tsunami Source Location				Tsunami Parameters						
Year	Mo	Dy	Hr	Mn	Sec	Val	Code	Country	Name	Latitude	Longitude	Max Water Height	Num. of Runups	Deposits	Magnitude		Tsu Int	Warn Status
1964	3	28	3	36	14.0	4	3	USA	PRINCE WILLIAM SOUND, AK	61.017	-147.648	51.80	425	15		6.10	3.50	

Tsunami Effects										Total Effects (Tsunami and Source)													
Deaths		Missing		Injuries		Damage		Houses Destroyed		Houses Damaged		Deaths		Missing		Injuries		Damage		Houses Destroyed		Houses Damaged	
Num	De	Num	De	Num	De	\$Mill	De	Num	De	Num	De	Num	De	Num	De	Num	De	\$Mill	De	Num	De	Num	De
124	3					116	4		3			139	3					400	4		3		



Option 1



Option 2

Project 2 Architecture and Technology Stack

