Correlating Natural disasters to Climate change and other environmental factors	
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Organization	
Organization Description	
Project Type	Data Science
Project Description	**This project involves** Collecting data about the prevalence of occurrences of certain natural disasters, specifically tornadoes and earthquakes, with the purpose of identifying climate and weather trends leading up to the occurrence. The environmental patterns we would like to investigate are surface weather, rainfall, and general weather data to determine patterns and correlation between the various natural disasters. Today we can find historical weather data and data on the significant natural disasters, but there isn't much indication to the general public when these natural disasters will happen. Our goal is to bring knowledge of trends and visualized quantification of aspects within the environment that lead up to the occurrence and to help predict when these disasters will happen.

Datasets	Here are some of the datasets we are considering to analyze Climate Change: Earth Surface Temperature Data https://www.kaggle.com/berkeleyearth/climate-change-earth-surface-temperature-data Significant Earthquakes https://www.kaggle.com/usgs/earthquake-database Fires https://www.kaggle.com/rtatman/188-million-us-wildfires Glaciers http://www.glims.org/download/ Floods https://www.eea.europa.eu/data-and-maps/data/european-past-floods/flood-phenomena/flood-phenomena-csv-files Storm Events Database https://www.ncdc.noaa.gov/stormevents/choosedates.jsp?statefips=-999%2CALL
Suggested Steps	Steps to complete the project including data collection, data cleaning/ processing steps, and analysis ● Clean temperature data put into Pandas dataframes. ○ This could be the "n" most volatile days or the days on which the temperature changes, for example a 3% change. ● Clean the data from the non temperature data from various datasets into respective dataframes. ● ● We will make time series analytics for each distinct type of phenomenon. ● Each form of data will be correlated with temperature change over time. ○ We understand different phenomena can have a different relationship with temperature change, therefore they must be analyzed separately. ● Analyze the phenomena (disasters or disastrous trends) to see if there is a correlation between them and the rise of temperatures.

Questions to be answered in Analysis	● When have each of these phenomena peaked in happening? ● What are some consistent weather patterns leading up to the phenomena? ● What weather data is unique to the phenomena? ● When have the highest continuous periods of increase been? ○ Are these periods related? ■ Could this prove correlation? ● Are there outlier years or periods? We are curious and would like to keep discovering questions as the project advances.