

Github URL: <https://github.com/pmathew96/mapbox-scrollytelling-starter>

GeoVisualization

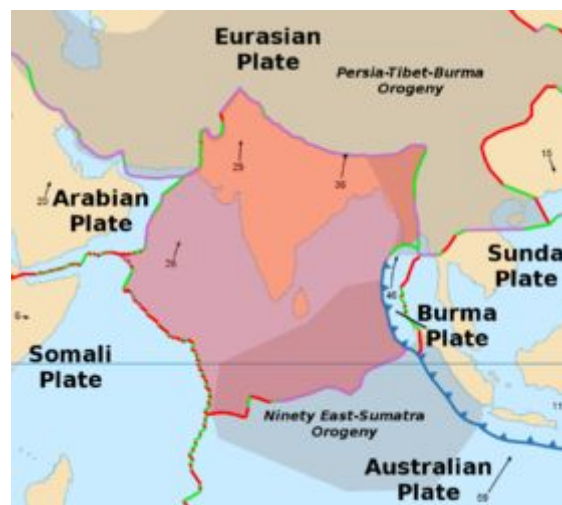
Topic: Seismic Activity and the Drifting Indian Plate

Background

The Indian plate is located in the North Eastern Hemisphere. It is surrounded by four major tectonic plates namely- Eurasian (North), Australian (South East), African (South West) and the Arabian Plate to the west.

Gondwana was once the largest continental landmass on Earth and covered 64% of the continents today. Around 140 million years ago, it is believed that this supercontinent split into four plates-

Antarctic, Indian, Australian and African. The Indian plate drifted towards the northern hemisphere. Scientists declare the Indian plate as active as it still drifts upwards by a few centimetres every year.



Earthquakes and Seismic Activity

One may describe it simply as the shaking of the Earth's Surface. This leads to a sudden release of energy from lithosphere. Thus, waves are created which are termed as Seismic Waves. The magnitude of an earthquake ranges from a tremor to massive destruction around the epicentre.

Earthquakes can be natural as well as due to human intervention. In this assignment, we analyse the Indian Subcontinent and the cause of Seismic activities in these regions. Over the years, humans have been able to record some of the worst earthquakes in India.

About the Map

The given assignment is implemented in mapbox. It is a data platform used primarily for web and mobile applications. The visual appearance of the map is defined using javascript and cascading style sheets. The file description is-

1. index.html : To different sections regarding earthquakes.
2. main.js : Defines action pertaining to the map.
3. Main.css : The Style sheet of this assignment.



User Navigation:

On this map, each circle represents the epicenter of a major Earthquake recorded in the Indian Subcontinent. On hovering to a particular circle, the user is provided with information regarding the location and magnitude of the Earthquake.

Case Study: In this assignment, we look into three important earthquakes in detail, namely-

Nepal-Bihar Earthquake	Year: 1934	Magnitude: 8.0
Assam-Tibet Earthquake	Year: 1950	Magnitude: 8.6
Sagaing Earthquake	Year: 1936	Magnitude: 8.0

On-Click Function:

When a user clicks on either of these options, the map zooms into the location by a measured value. Additionally, the user is directed to a brief description of the cause and effect of the earthquake. The user can manually browse these circles by simply scrolling down the window.

Analysis

One observes that most of the epicentres lie in and near the Himalayas. Secondly, the earthquakes are of high magnitude and led to death and destruction in these regions. On reading further about the earthquakes, one realizes the importance of the location of the Indian and Eurasian Tectonic plates.



As described before, the Indian plate is active and drifts northwards, where it meets the Eurasian plates. The Himalayas were formed when the two plates first collided. Scientists record that the Indian plate moves Northwards by 4cm every year.

Given this information, one may infer the reason for the seismic activities around Himalayas. Due to collision of the two massive plates, earthquakes have been a common phenomenon on this part of the subcontinent. Another reason to back this argument, is the absence of epicentres in South India. This is not to say that Earthquakes and Seismic activity is not felt in these regions.

Conclusion

The collision and faults caused due to movement of the Indian Plate are the main reason for these earthquakes. This map makes it clear that even though earthquakes are frequent along all fault lines,

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the largest earthquakes all happened in the same region, near the Himalayas. This gives us more information about the direction of motion of the plates which is an interesting result we can infer.