Category: Ideate and Create

Sub: 1D 2D 3D

**-Why do you think, this is the most innovative project?**

Mass people can get help from this project. This project is not only useful for scientists and professionals. Farmers, tourists, geologists, architects – people from different profession and lifestyle can get help. Users can get an idea about weather, temperature, soil moisture, humidity etc of a certain region and they can also get a visual showcase of the data. It also provides future prediction by analyzing the past data.

**-What is your Project Name? \***

Earth Spectator

**-Write a short description of your project. \***

Earth Spectator is a 3D web application which shows various conditions of our Earth. The surface soil conditions, surface and atmospheric temperatures, humidity, greenhouse gas concentrations, rainfall, air particles, cloud density and more environmental conditions will be shown in real time. Climate change of the past years will be shown and there will also be a prediction of future climate condition of the Earth. Data from NASA Satellites and missions will be used to create this project.

**-Please write Broad description of your project? \***

We are going to create an interactive 3D web application where the users can observe the Earth climate and weather. We will use the data that NASA collected by observing around the Earth with different satellites. The data of past years will be provided to show the climate changing process of the Earth. From those data we can predict the future climate changes. How the Earth will be in the next two or five years can be shown by analyzing the climates of the past years.

Our aim is to use the available data provided by NASA and simplify them for the users to understand the climate change of our Earth and predict a climate system of the future. A real-time weather of the Earth will be shown every day which will be updated continuously. A 3D model of the Earth will be shown with the data of different timelines. The surface soil conditions, surface and atmospheric temperatures, humidity, greenhouse gas concentrations, rainfall, air particles, cloud density and more environmental conditions will be shown in real time. All the data will be shown by the 3D globe. The users can focus on a specific country or region of the Earth to see detailed information of the climate there. Climate data of the past few years will be available for the users to see. Users can choose a specific year and see the climate change process easily around the globe. Moreover, there will be climate predictions for future years which users can see simply by clicking.

By observing the past climate status and future climate predictions users of different categories can get help. As an example, by observing climate data farmers can get the idea of the amount of rainfalls happening in a specific area. They can get information about soil moisture and temperature. Tourist and travelers can get idea about the weather of a tourist spot. Geologists can observe the transformation of Earth due to climate change.

We are going to use data from NASA’s EONET (Earth Observatory Natural Event Tracker), Global Precipitation Measurement data, Soil Moisture Active Passive Satellite and other satellite data provided by NASA. We will also use Google Earth data and APIs. Real time weather will be shown by the help of APIs and updated data given by weather forecast services. It will be an open source project using different web technologies.

**-Please write 4-7 Benefits of your project?**

1. Farmers will get information about soil condition of specific area which will help them to cultivate more crops.

2. Travelers from all around the world can get real time weather updates. It will help them to plan the next tour destination.

3. Geologists can get a clear view of climate change data which will help their researches.

4. Environment experts can see the climate change of the past years and get a prediction of the future climate conditions. They can use or modify our project to further speed up their research.

5. People can be aware of the consequences of environmental pollution caused by human when they observe the climate changing process with our web app.

6. It is a hassle-free way to get knowledge about the weather and climate system of the Earth.

**-What is your Future Plan with this Project? \***

We will be working with data of limited number of countries of the world in the primary level. In future, we will show data of all the countries and islands of the world. We will try to update our project regularly and will give more accurate predictions of climate change.