Mission

Mission is our project on Weather Analysis and Visualization. This helps business work with more accuracy and without any disruption. In this project, analyse and interpret various weather pattern, create weather forecasts and develop visualization to showcase the results effectively.

This project is useful for

1) **Agriculture**
2) **Airlines**
3) **Fishing**
4) **Space science**
5) **Transportation activities at coastal areas and sea**
6) **Government**

Problem

Agriculture

Weather plays a major role in determining the success of agriculture industry. Most field crops are dependent solely upon weather to provide life sustaining water and energy. Animals are also dependent upon weather for their comfort and food supplies. Adverse weather conditions can cause production losses.

Around 36mha agricultural area was affected due to hydro-meteorological calamities since 2016. In 2021, cyclone Tauktae and cyclone Yass affected in Odisha, West Bengal and Karnataka where lives and livelihoods were affected.

In July 2021, floods in Maharashtra damaged crops. These situation occurs and affected agriculture ,hence weather analysis is necessary.

Airlines

Weather affect aircraft operations. Low cloud, fog and rain may impede visibility at or around airport . Due to high temperature the engine performance of the aeroplanes degraded , increase in temperature results is an increase in density altitude then higher the density altitude the fewer molecules there are per volume of air, affect aircraft performance.

Between 2004 and 2017, around 22% of flights within the United states were delayed or cancelled due to adverse weather conditions.

National transportation safety board reports most commonly find human error to be the direct accident cause, weather is a primary contributing factor in 23 percent of all aviation accidents

Fishing

Weather and climate are major factors affecting in aquaculture. Water temperature exerts major limitations in aquaculture production. The timing of stocking and harvest operations must be within period of suitable water temperature.

There are cold water species (rainbow trout and other salmonides), warm water species(bait minnows, carps) and tropical species(penaeid shrimp and tilapia) these three classes are temperature tolerance, affected production by weather changes.

Space science

Strong solar storms can cause fluctuations of electrical currents in space , directly impacting the power grid in earth and energizing electrons and protons trapped in Earth varying magnetic field. These disturbances can cause problems with radio communication. Global Navigation System, power grids and satellites.

During geomagnetic storms, the increased density and energy of particles trapped in the radiation belts means a greater chance that an astronaut will be hit by a damaging particle. Damage to DNA within cell may lead to cancer.

Transportation activities at coastal areas and sea

Extreme event of rainfall can delay in the loading and unloading of cargo and shipment. Sea level rise, in combination with storms surges and flooding, will be detrimental to land safety. Moreover damages of infrastructure of port, affect the operation of many port facilities. In addition , the delays and increased costs for repair, restoration or worse relocation of some facilities can affect profitability.

Government

Extreme heat can cause road buckling, government make extra adjustment of cost for repairing.

According to world maritime university ice continues to melt cause sea levels are rising , government take care of coastal side human locality and governmental infrastructure.

Mission

- Our mission to overcome above problems and regularise weather issues and try to reduce weather related losses and enhance societal benefits , including protection of life and property. Being able to forecast and plan for the future .

- Preparatory phase of our mission is to collect historical data and then using python programming language for cleaning the data.

- All clean and clear data store in the IBM cloud server for further processing

- By using python and machine learning technique gives some prediction and analysis.

- Day to day analysis is done in the project.

- The client using this project plays crucial role in their industry using weather analysis.

- If some changes occurs then our server give important notification to our client and gives proper guidance to them.

- Future prediction of the weather is also calculated in the system and notify to the industry.

- This project is also working on global warming issue, ozone depletion and sea water level increase.

- Our moto is to identify the problem and make some solution and also take some precaution on future purpose.