**ABSTRACT**

Traditionally, climate assessment has been performed reliably by treating the environment as a liquid. The current wind condition is being observed. The future state of the environment is recorded by understanding thermodynamics and the numerical position of the liquid elements. Nevertheless, this traditional arrangement of differential conditions as observed by physical models is at times unstable under oscillating effects and uncertainties when estimating the underlying states of air. This indicates an insufficient understanding of environmental variations, so it limits climate forecasts to 10-day periods because climate projections are essentially unreliable. But machine learning is moderately hearty for most barometric destabilizing effects compared to traditional techniques. Another favorable position of machine learning is that it does not depend on the physical laws of environmental processes.

**Background**

For the current situation, India observatory conducts traditional weather forecasting. There are four common methods to predict the weather. The first method is the climatology method that is reviewing weather statistics gathered over multiple years and calculating the averages. The second method is an analog method that is to find a day in the past with weather similar to the current forecast. The third method is the persistence and trends method that has no skill to predict the weather because it relies on past trends. The fourth method is numerical weather prediction the is making weather predictions based on multiple conditions in the atmosphere such as temperatures, wind speed, high-and low pressure systems, rainfall, snowfall, and other conditions. So, there are many limitations of these traditional methods. Not only it forecasts the temperature in the current month at most, but also it predicts without using machine learning algorithms. Therefore, my project is to increase the accuracy and predict the weather in the future for at least one month by applying machine learning techniques

**Objective (Brief)**

Purpose of this project is to predict the temperature using different algorithms like linear regression, random forest regression, and Decision tree regression. The output value should be numerically based on multiple extra factors like maximum temperature, minimum temperature, cloud cover, humidity, and sun hours in a day, precipitation, pressure and wind speed.