Rainfall Prediction - Weather Forecasting

Problem Statement:

Rain Prediction –Weather forecasting

Weather forecasting is the application of science and technology to predict the **conditions of the atmosphere** for a given **location** and **time**. **Weather forecasts** are made by collecting **quantitative data** about the **current state of the atmosphere** at a given place and using meteorology to project how the atmosphere will change.

Rain Dataset is to predict whether or not it will rain tomorrow. The Dataset contains about 10 years of daily weather observations of different locations in Australia. **Here, predict two things:**

1. Problem Statement:
a) Design a predictive model with the use of machine learning algorithms to forecast **whether or not it will rain tomorrow**.
b) Design a predictive model with the use of machine learning algorithms to **predict how much rainfall could be there**.

Dataset Description:
Number of columns: **23**

Date - The date of observation

Location -The common name of the location of the weather station

MinTemp -The minimum temperature in degrees celsius

MaxTemp -The maximum temperature in degrees celsius

Rainfall -The amount of rainfall recorded for the day in mm

Evaporation -The so-called Class A pan evaporation (mm) in the 24 hours to 9am

Sunshine -The number of hours of bright sunshine in the day.

WindGustDi r- The direction of the strongest wind gust in the 24 hours to midnight

WindGustSpeed -The speed (km/h) of the strongest wind gust in the 24 hours to midnight

WindDir9am -Direction of the wind at 9am

WindDir3pm -Direction of the wind at 3pm

WindSpeed9am -Wind speed (km/hr) averaged over 10 minutes prior to 9am

WindSpeed3pm -Wind speed (km/hr) averaged over 10 minutes prior to 3pm

Humidity9am -Humidity (percent) at 9am

Humidity3pm -Humidity (percent) at 3pm

Pressure9am -Atmospheric pressure (hpa) reduced to mean sea level at 9am

Pressure3pm -Atmospheric pressure (hpa) reduced to mean sea level at 3pm

Cloud9am - Fraction of sky obscured by cloud at 9am.

Cloud3pm -Fraction of sky obscured by cloud

Temp9am-Temperature (degrees C) at 9am

Temp3pm -Temperature (degrees C) at 3pm

RainToday -Boolean: 1 if precipitation (mm) in the 24 hours to 9am exceeds 1mm, otherwise 0

RainTomorrow -The amount of next day rain in mm. Used to create response variable . A kind of measure of the "risk".