**PROJECT**

About the project:

The NOAA dataset is a weather dataset that provides hourly and daily weather observations for different locations around the world. The dataset is provided by the National Oceanic and Atmospheric Administration (NOAA) and is publicly available on their website.

<https://www.ncei.noaa.gov/data/global-historical-climatology-network-daily/access/>

You can download the latest dataset about any station to find the Maximum temperature at a given date

In our model, we used the daily weather observations dataset for a specific location and focused on predicting the maximum temperature (TMAX) using an Artificial Neural Network (ANN) model. The ANN model is a deep learning algorithm that can learn complex relationships between input and output variables.

We pre-processed the data by filtering out missing values, grouping the data by date, and creating new columns for year, month, and day. We then split the data into training and test sets and built an ANN model with two dense layers and an output layer. We used the mean squared error (MSE) as the loss function and stochastic gradient descent (SGD) as the optimizer.

After training the model, we evaluated its performance on the test set using the test loss metric, which measures the difference between the predicted and actual values for the maximum temperature. We also plotted the test loss for multiple epochs to visualize how the model's performance improved over time.