Screening Test

Hello everyone,

There are two separate tasks crucial to our organization being tested, please follow the guidelines mentioned and complete the tasks.

Note: Please use Python for this task. You are free to use any library necessary as long as it is open sourced.

You are encouraged to share your solutions:

- On Github(version controlling is a must), keep track of your Models, Analysis and hyperparameter tuning. A model.py file can be added which can be ran to recreate the model.
- Use Jupyter notebooks for Studying the data and drawing important conclusion.
- Use of Docker containers will be appreciated (bonus points for this).
- You can even deploy the model in a sample app or as an endpoint (have to provide readme of how to use in this case) if you want to

Both the assignments are quite simple, with the first assignment dealing with temperature forecasting, while the second assignment being a regression model. Please feel free to reach out to us in case of any further queries.

Download the data from: https://drive.google.com/drive/folders/1bxSdbVdfV-p6z6gUgHz_k5dppj0pO5Zh

Assignment 1 - Time Series Forecasting (using Weather_data.csv)

- Predict the temperature column ' _tempm' for Delhi, using Time Series Forecasting
- Share your understanding of underlying data using descriptive analytics (You're encouraged to do data cleaning as well)
- For prediction, try multiple available techniques and choose the best performing model
- Does a time series model developed using deep learning techniques give more accurate predictions?
- Model must take a date as input and output the probable temperature for that day (so basically forecast to the given date and then report the value of that date)
- You are allowed to use the other accompanying features as input as well and create a multi-variate forecasting model.
- The training data is available from Jan 1996 - Nov 2016. We will use data from Dec 2016 - April 2017 to check the model accuracy/validity.

Assignment 2 - Ailerons data set (using ailerons.csv)

This data set addresses a control problem, namely flying a F16 aircraft. The attributes describe the status of the airplane, while the goal is to predict the control action on the ailerons of the aircraft.

- Proper EDA and Statistical analysis of data followed by Developing a model, to predict the column "Goal".
- Loss function is "RMSE"
- You are encouraged to try out different techniques from ML/DL and share comparative results.
- Use of proper feature selection process and hyperparameter tuning (if required) is necessary.
- You're allowed to do any feature engineering/feature selection you deem necessary
- Properly commenting the code is required