Title: Solar Irradiance Tracking using Time Series Prediction

(Language: Python/Jupyter Notebook and Node Red)

Brief Description:

I want to design a system where I can predict the next solar irradiance data through the method of time series forecasting. And from the results, we will be able to know what's the next hour of solar irradiance data based on the prediction.

***Steps (Can be added more based on you for better accuracy and performance):**

1. Existing of 1–2 year Solar Irradiance Data (I will be attaching the excel .csv format)

2. Train all the data with three different model/Algorithm
   a. LSTM Model
   b. KNN
   c. SVR

   [You may include different algorithm that give better accuracy]

3. Calculation of the performance metrics on each algorithm
   (a) Mean Absolute Error (MAE),
   (b) Mean Squared Error (MSE),
   (c) Root Mean Squared Error (RMSE)
   (d) R^2 (R-Squared).

4. Plot three different type graph (as attached with the diagram I, II and III)
   Note on plotting the graph:
   Make sure the graph is shown both in the code of python/Jupyter notebook and the Node Red

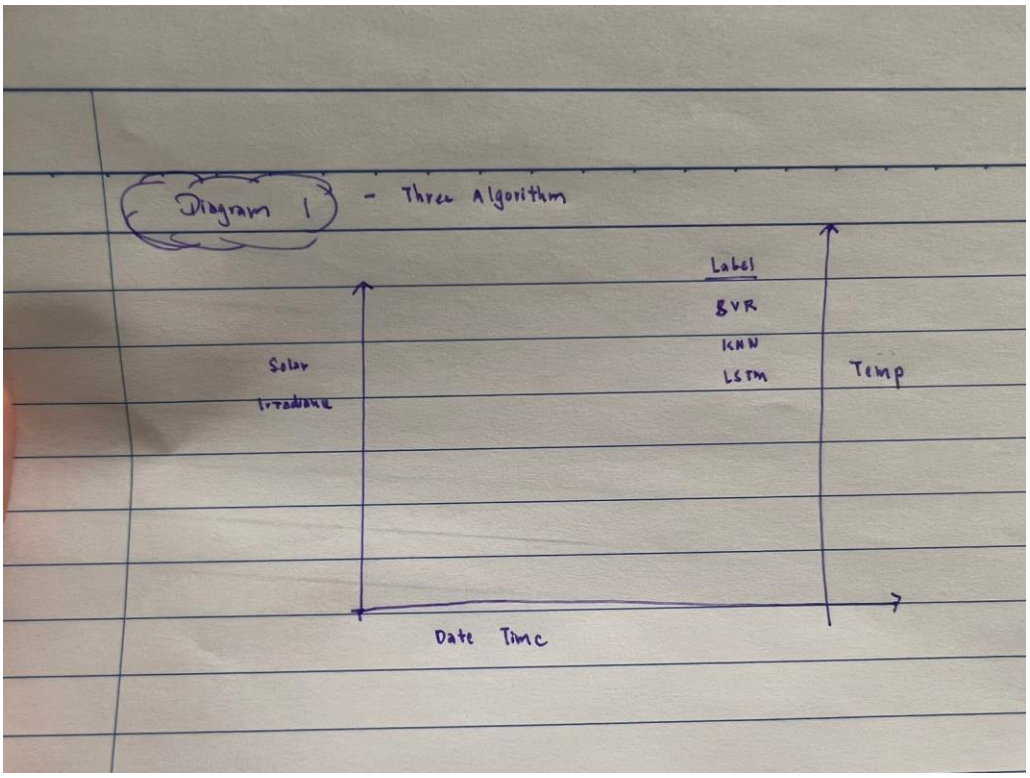


Diagram 1
- Three Algorithm
Label
SVR
KNN
LSTM
Solar
Irradiance
Temp
Date Time

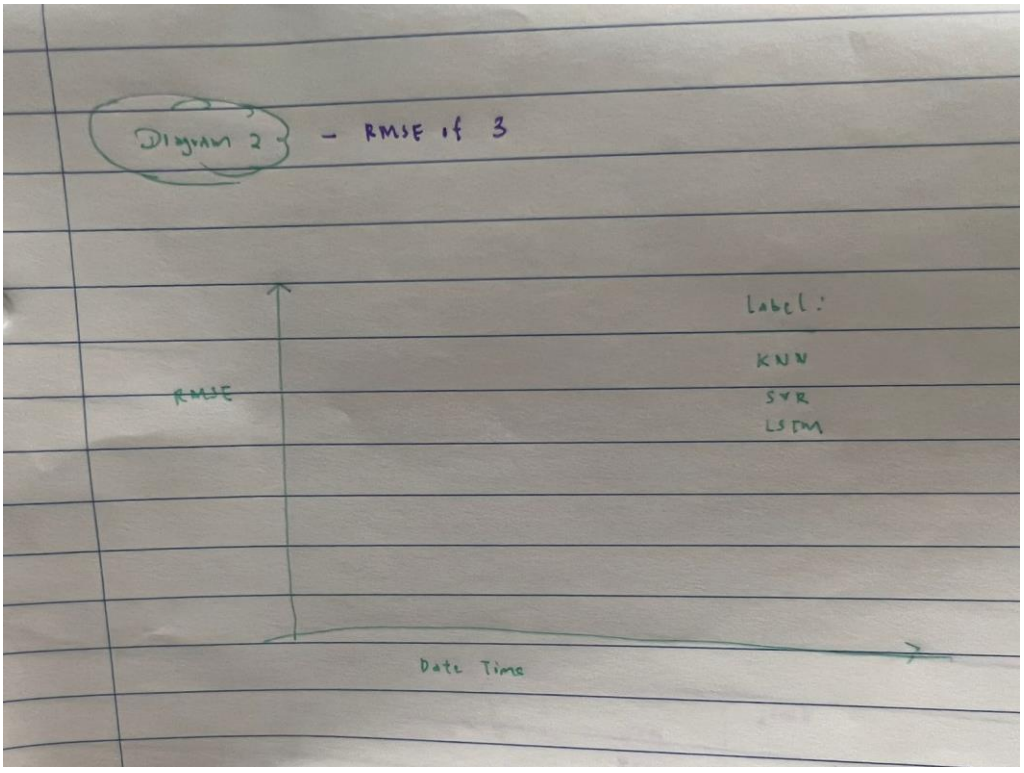
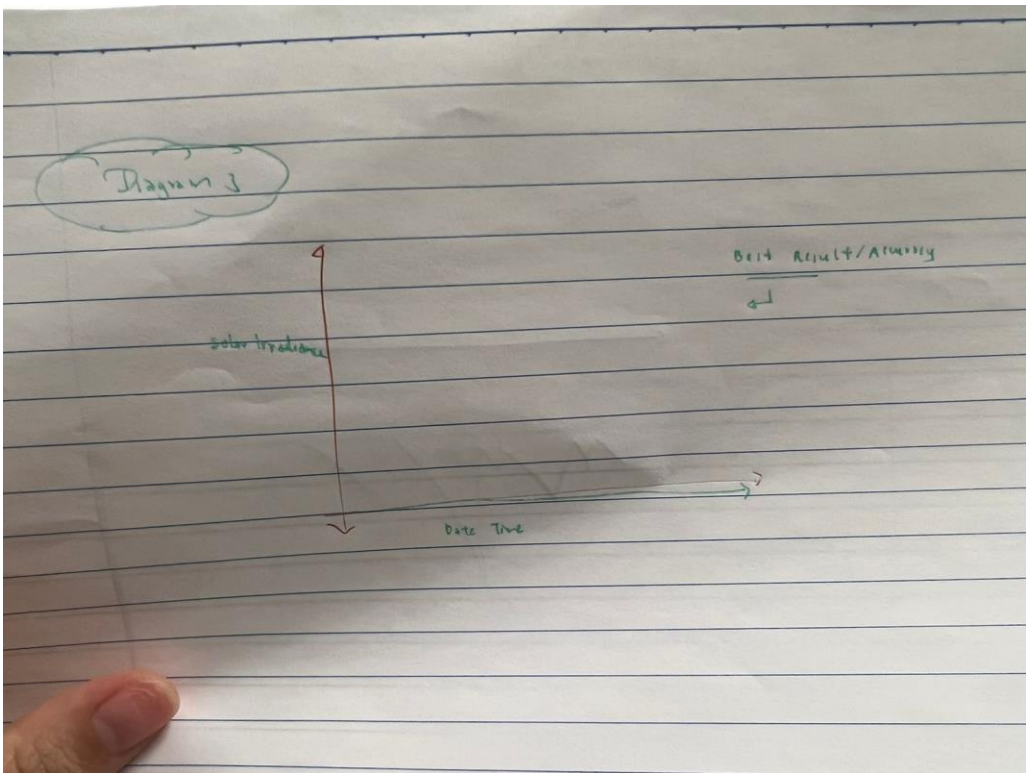
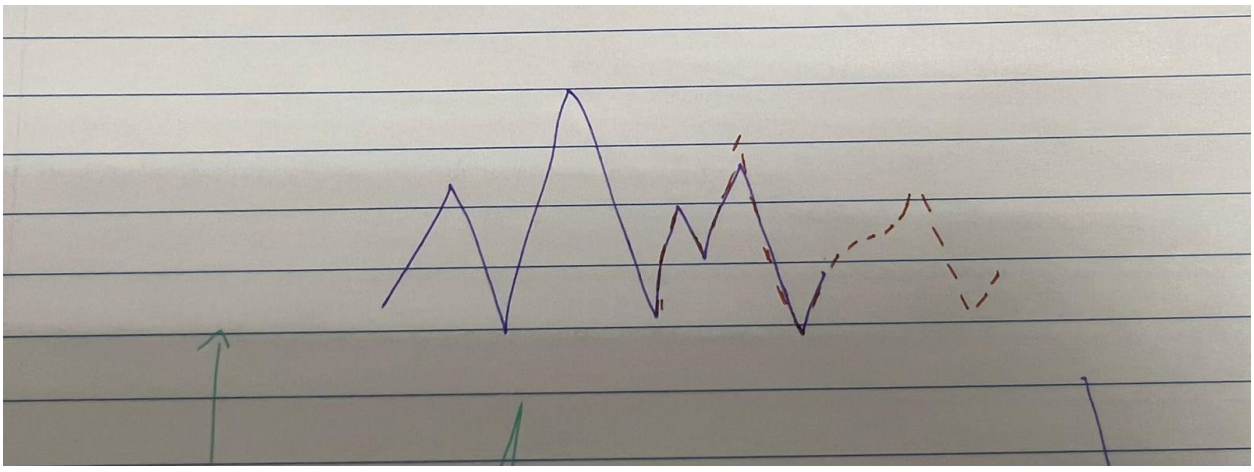


Diagram 2
- RMSE of 3
Label:
KNN
SVR
LSTM
RMSE
Date Time



The Figure below, I want the line to be something like that if it is possible, purple indicating past value, brown is forecasted value



5. Once the code is completed, it has to be implemented onto the Node Red. One of the nodes on the workspace has to be a file which I can adjust or replace with on the csv file. I would like to show the all the graph that you plotted to be shown on the dashboard.