

ASSIGNMENT - 2

1. Linear Regression

- You have been provided a dataset with 16 houses and their corresponding House Area , No. of Rooms and House Price. Your job is to train a Linear Regression Model based on this dataset to predict house prices based on the given feature.
- You cannot use any library with pre-built linear regression models. You can only use Numpy , Pandas and Matplotlib.
- You need to upload your IPython notebook on the Google form along with answering some basic questions. The notebook must be strictly titled as {Roll_Number}_2.1.ipynb
- The dataset is linked here - https://docs.google.com/spreadsheets/d/1AjPzzXDMNZGZPxpC5qyYsg1vc5f_JD0uPceMAsfQo/edit?usp=sharing

2. Decision Trees

- You are an Employee in the Gradient Gains Foundation. You have been appointed as the organiser for the Gradient Gains Foundation Annual sack race. It is a relay race and the employees are divided into Team A and Team B. You were explained the rules of team making in an online meet, however being the hardworking employee that you are, you joined the meet put it on mute and continued your life. You are now given the responsibility of team formation, but you do not know the rules. You however manage to get last years teams and the information that the rules of team formation are same. You also remember from the online meet (The 10 second you got active for attendance) that A single decision Tree is used.
- Based on the dataset provided create a single decision tree to correctly classify the teams. You cannot use any library with pre-defined function however there are two ways you can answer this question. You can code a decision tree creation algorithm using basic Python libraries and get an algorithm. However that might be tricky, so instead you can do [Exploratory Data Analysis](#) to understand the pattern of the data.
- You need to upload your IPython notebook on the Google form along with answering some basic questions. The notebook must be strictly titled as {Roll_Number}_2.2.ipynb.
- The dataset is linked here:-

https://docs.google.com/spreadsheets/d/1rFyU55Pu7nm9BZItX_qy-XF-gSfeSRgzejEchmZHnV4/edit?usp=sharing

3. Neural Network

- Watch the first 9 videos on [Neural Network by Statquest](#)
- There would be a bunch of questions about Neural Network in the google form based on this.

4. Finance

- Now that you are aware about 6 important technical indicators it's your time to implement them.
- First understand what are [functions](#) in programming and how to code them in python.
- Create 6 separate function to calculate the 6 financial Indicators discussed in the meet. Then apply those functions on the past 2 years data of Reliance India stock.
- You need to upload your IPython notebook on the Google form along with answering some basic questions. The notebook must be strictly titled as {Roll_Number}_2.4.ipynb.

5. Meme Time

- Create 2 memes on anything related to the project/mentors, or ML in general.

6. Github

- Create your own GitHub repository titled Gradient Gains. Upload all the 3 files to your GitHub repository (Without using upload files option). Name the files according to their content and not as per the mentioned format in the GitHub repository.

Note from the Mentors

Please note that this assignment submission is **mandatory for you to be eligible for mid-eval**. I know that this is a relatively steep jump in the difficulty level, but I believe that if you sincerely do this assignment, you will end up learning almost double compared to what you have learnt till now.

Here's my honest advice on how to attempt, Now you will be tempted to use AI for solving this assignment and I would recommend you do use AI but don't copy paste solutions from it. Use it to understand the concept, break it into simpler pieces and guidance wherever needed. Even when you do ask it to generate the

code, make sure you understand what each line does. This is for your own sake as well as for the sake of your mid-eval because in the mid-eval you would be judged largely on the basis of your assignment 2 submission.