ML Tasks

Task 1 :

EDA is the basis of Machine Learning. Data needs to be preprocessed and refined in order to be modelled effectively.
If you do not know what EDA is chcek the below link:
https://youtube.com/playlist?list=PLupD_xFct8mFDeCqoUAWZpUddeqmT28_L&si=1E2H34vbbk9_cesE

I have attached a dataset below. Perform EDA on it and give me any 3 insights which might help me suggest what models can be used to predict an effective outcome. What type of visualisations you demonstrate is upto you, but make sure when you come to the interview with this task, you should be able to explain me the insights you gained from the following visualisation. Make sure to get in depth knowledge regarding what type of plots to use and when so that give unique data, you are able to analyse and get insights.

Dataset

Dataset :

Task 2 :

Now congratulations on completing your first task. By now, you might have understood what is EDA and why do is it essential to us.
Now the next part is modelling. Machine Learning is used to take input data, learn from it and predict the outcome for new data. Modelling is essential for this prediction.
So after performing task 1, model the data using an algorithm of your choice. It should best suit the data and give a good accuracy.
Justify why you chose the algorithm and make sure to include the performance metrics (not just accuracy) pertaining to that algorithm.

If you aren't aware about the various ML algorithms, make use of Youtube.

Task 3:

Deep Learning is a subset of Machine Learning (ML) that focuses on using neural networks with many layers (often referred to as deep neural networks) to model complex patterns in data. It is inspired by the structure and function of the human brain, where neurons are connected in layers to process information.

Where Traditional ML algorithms are not able to handle unstructured data and are not scalable enough, Deep Learning is more useful in that aspect.

Resource:

https://youtube.com/playlist?list=PLblh5JKOoLUIxGDQs4LFFD--41Vzf-ME1&si=r8xwxEq2fHFZ2ooE

So write a short article on Deep Learning and Neural Networks explaining their types as well as how exactly they mimic the human brain.

Make it informative and explain in depth each and every aspect with information that might even surprise me!!

Bonus Task :

Since Research is an important aspect of our committee, think of 3 unique research ideas that you think you can implement in a time frame of 6 months in the fields related to Machine Learning.

(It might be CV, NLP, RL, DL, etc)

Note : Do a minor literature review regarding the ideas you're suggesting so that you get to know if your ideas are unique.