Question 1: Please download the papers titled “Explainable AI for Classification using Probabilistic Logic Inference” by Fan et al and “Causability and explainability of artificial intelligence in medicine” by holzinger et al and submit their critical reviews. [100 Marks]

Progress:
The following two papers have been read and critically analyzed.

Question 2: Please thoroughly read the first paper by X. Fan et al (in Question 1) mentioned in the above. Please use it as a starting point and understand the explainable model presented in it. Go to https://www.kaggle.com/datasets and download a Medical Dataset and see what challenging question it poses. If you need to further understand Explainable AI then also study “Explainable AI: A Review of Machine Learning Interpretability Methods” by Linardatos et al published in Entropy Journal of MDPI

Progress:
The dataset chosen from Kaggle was *“Heart Failure Prediction Dataset”*. The following dataset contained 11 clinical features for predicting heart disease events.I have implemented 4 different algorithms that include Multi Layer perceptrons, Support Vector Machines, Decision Trees and Gaussian Naive Bayes. For feature engineering i.e is to extract the most relevant features I used a random forest classifier. It gave me the selected features from which I took the 7 most important ones. To pre-process my data I removed the unimportant features and to further enhance my accuracy I converted my dataset to binary for easier implementation. However, the maximum accuracy I received from all the models was 77.5% that from decision trees. MLP gave me an accuracy of 74.3%, Naive Bayes gave 70.11% and SVM gave 72.89%.
Moreover, to implement the algorithms I extracted the major algorithms from the paper but however, due to lack of time I was unable to execute them completely.