

At first data set is loaded using `read_csv()` , and then the Investment Grade(target variable) is separated from the predictor variables. There is a categorical value in “Rating” column , so it is encoded using `LabelEncoder`. The dataset is split for training and testing using `train_test_split`. Then predictor variables are standardized using `StandardScaler` . This is done to ensure that all features have same scale and distribution. Scaled data is used to fit the models. Alpha parameter in Lasso and Ridge regularization is 0.5. in logistic regression penalty parameter is used to set type of regularization and C is used to control the strength of regularization. Based on the idea that they will provide a good balance between bias and variance, the values of alpha, penalty, and C are chosen. From `sklearn.metrics` we import accuracy score, classification report and confusion matrix , these are used to evaluate the effectiveness of models

MLP classifier is implemented to predict investment grade and rating of the firms. Overall, the outcomes show that the neural network, which received the highest accuracy rating, was the most effective model for this problem. But other models, like Ridge and Lasso, also did well. when we run all these code we can find that MLP classifier performs best accuracy of 97%

Finally, the selection of parameters and models is determined by the individual problem and dataset. To select the most acceptable and efficient model, it is crucial to compare and analyse various models and metrics.