Minor Project

- **Project Name:**

Artificial Intelligence February Minor Project

- **Project Description:**

Problem statement: Create a Deep learning multiclass classification model to predict the quality of the wine based on certain physicochemical tests.

Context: The datasets consist of several medical predictor (independent) variables and one target (dependent) variable, Outcome. Independent variables include the number of pregnancies the patient has had, their BMI, insulin level, age, and so on.

Dataset:

https://drive.google.com/file/d/13Le8kChIHw0zWOaABtz9rvJra3abHAHR/view?usp=sharing

Details of dataset:

There are 12 features (based on physicochemical tests):

1. fixed acidity
2. volatile acidity
3. citric acid
4. residual sugar
5. chlorides
6. free sulfur dioxide
7. total sulfur dioxide
8. density
9. pH
10. sulphates
11. alcohol
12. quality (a value between 3,4,5,6,7,8)

Steps to consider:

1. Remove handle null values if any
2. Build a Multiclass ANN Classification Architecture.
3. Execute the model for appropriate number of epochs
4. Select loss, optimizer and activation functions appropriately
5. Depict loss vs. val_loss on line chart
6. Depict accuracy vs. val_accuracy on line chart.
7. Generate predictions on test_data
8. Compute Confusion matrix and classification report