Q1

Write Python code to build a neural network with the following details.

- Input data = Iris dataset

- Number of hidden layers = 1

- Number of units in hidden layer = 10

- Number of iterations = 5000

- Learning algorithm = stochastic gradient descent

- Activation = logistic

- Learning rate = 0.0001, 0.001, 0.01, 0.1, 1

1. Compare the training score for each learning rate.

2. Plot the loss curve for each learning rate.

3. Report execution time for each learning rate as a bar graph. (Use library time and time() method)

Q2

Predict whether the credit card using customer going to default or not.

1. Import the data from the default of credit card clients ([Links to an external site](https://archive.ics.uci.edu/ml/datasets/default+of+credit+card+clients).)
2. Consider all columns as independent variables and assign to variable X except the last column and consider the last column as a dependent variable and assign to variable y.
3. Remove columns that don’t help the problem statement.
4. Do Feature Scaling on Independent variables
5. Split the data into train and test dataset
6. Use Keras to make the neural network model and train the dataset on the same.
7. Compute the accuracy and confusion matrix.