**URL of the Data Set**: <https://archive.ics.uci.edu/ml/machine-learning-databases/car/car.data>

1. **Pre- Processing Strategy:**

* Replacing all missing values with NaN. For example: in adult dataset, the missing value is ‘?’ and so we are encoding it to NaN. Dropping instances with NaN values.
* Checking if the attribute value is numeric or categorical, if it’s categorical, we are encoding it to numeric value.
* Scaling the input attribute values by subtracting each attribute value with mean of the attribute and dividing with the Standard deviation of the attribute column.
* Encoding the output class values using Classification problem. Initially, we encode all distinct classes to 1, 2, 3… depending on the number of distinct class and then we convert it to the binary string.   
  Example: If distinct class values are ‘Red’, ’Blue’, ’Green’ it will be encoded initially into 1,2 and 3. But 1 will be processed as (1,0,0,), 2 will be processed as (0,1,0) and 3 will be processed as (0,0,1) where index of 1 in each string indicates whether it is Red or Blue or Green.

1. **Best Set of Parameters:**

**Split Percent:** 80%

**Number of Iteration:** 100

**Number of Hidden Layers:** 1

**Number of Neuron in Each Layer:** [8]

**Learning Rate:** 0.7

Please see the log file (Car\_Logs.log) shared in the folder

1. **Best Results:**

**Accuracy on – Training Data:** 82.81%

**Accuracy on – Testing Data:** 83.66%

**Total Training Error:** 0.29733

**Total Testing Error:** 0.29566

Please see the ‘BestResult.txt’ file shared in the folder