**LAB**

**RECORD**

**ADVANCE MACHINE LEARNING**

**(01CO1301)**

Department of Computer Engineering



Marwadi University

Faculty of P.G. Studies & Research in Engineering & Technology

Near Gauridad, Rajkot-Morbi Highway, Gujarat, India



**CERTIFICATE**

This is to certify that Mr./Ms. **NameXXX** Enrollment No. **92XXXXXX** studying in the Branch **Computer Engineering**, of Semester **3rd** has satisfactorily completed his/her term work in the Subject of **Advance Machine Learning (01CO1301)** for the term ending in the month of **November**, **2022**.

Date:

Faculty In-Charge

Name:

Signature:

Head of Department:

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| **No** | **No** |
| 1 | Write a program to extract the data from database using python. |  |  |  |
| 2 | Given the following data, which specify classifications for nine combinations of VAR1 and VAR2 predict a classification for a case where VAR1=0.906 and VAR2=0.606, using the result of k-means clustering with 3 means (i.e., 3centroids) |  |  |  |
| 3 | Implement and demonstrate the FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples. Read the training data from a .CSV file. |  |  |  |
| 4 | For a given set of training data examples stored in a .CSV file, implement and demonstrate the Candidate-Elimination algorithm to output a description of the set of all hypotheses consistent with the training examples. |  |  |  |
| 5 | Write a program to demonstrate the working of the decision tree based ID3 algorithm. Use an appropriate data set for building the decision tree and apply this knowledge to classify a new sample. |  |  |  |
| 6 | Write a program to build an Artificial Neural Network (ANN) by implementing the Backpropagation algorithm and test the same using appropriate data sets. |  |  |  |
| 7 | Write a program to implement the Naïve Bayesian (NB) classifier for a sample training data set stored as a .CSV file. Compute the accuracy of the classifier, considering few test data sets from UCI repository. |  |  |  |
| 8 | Assuming a set of documents that need to be classified, use the naïve Bayesian Classifier model to perform this task. Built-in API can be used to write the program. Calculate the accuracy, precision, and recall for your data set. |  |  |  |
| 9 | Write a program to construct a Bayesian network considering medical data. Use this model to demonstrate the diagnosis of heart patients using standard Heart Disease Data Set. You can use Python ML library classes/API. |  |  |  |
| 10 | Apply EM algorithm to cluster a set of data stored in a .CSV file. Use the same data set for clustering using *k*-Means algorithm. Compare the results of these two algorithms and comment on the quality of clustering. You can add Python ML library classes/API in the program. |  |  |  |
| 11 | Write a program to implement *k*-Nearest Neighbour algorithm to classify the iris data set. Print both correct and wrong predictions. Python ML library classes can be used for this problem |  |  |  |
| 12 | Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment and draw graphs |  |  |  |