**List of Experiments**

**Faculty Name:** Dr. Raj Kishor Bisht **Course:** BCA **Semester: VI**

**Subject:** Fundamentals of Machine LearningLab  **Course Code: PBC 602**

1. Create a Data Frame using dictionary containing students’ marks details with columns Student\_ID, Student\_Name, Gender, Sub1, Sub2, Sub3 with the marks of some students.

Or you can create an excel file for the same and import it.

1. Find the mean and median marks in each subject.
2. Find the mode of ‘Gender’ column.
3. Find the variance and standard deviation of marks in each subject.
4. Define two matrices. Find their sum, difference, transpose and product of two matrices.
5. Create a dictionary of five subject name as keys and marks as values of these keys. Display
6. A list of all subjects
7. List of marks
8. Display total marks and percentage of the student.
9. Using control structure, display the result of a student based on the following criteria

If percentage is more than or equal to 60, I division

If percentage is more than or equal to 50 and less then 60, II division

If percentage is more than or equal to 40 and less then 50, III division

Otherwise fail.

1. Create a .txt file in your directory with three lines as follows:

Hi how are you?

I am fine.

I hope that you are also fine.

1. Display the content of the file as a string.
2. Display each line as an element of a list.
3. Display the number of characters in the file.
4. Number of characters in first line.
5. 2nd to 5th characters of second last line.
6. Rename the file
7. Delete the file
8. Implement K-means algorithm
9. Implement DBSCAN algorithm
10. Apply Low variance filter for dimensional reduction.
11. Apply high correlation filter for dimensional reduction.
12. Implement principal component analysis (PCA).
13. Uploading an excel/csv data file (containing Student\_ID, Student\_Name, Gender, Sub1, Sub2, Sub3 with the marks of 30 students). Perform the following tasks:
14. Check for missing values, and replace them with suitable replacement.
15. Create two DataFrames containg Student\_ID, Student\_Name of male and female students.
16. Add a new column in the DataFrame ‘Percentage’ showing total percentage of each student.
17. Normalizing the marks of each subject.
18. Draw a bar diagram showing number of male and female students in the class.
19. Draw a pie chart showing the number of students having percentage (a) > = 60 (b) > =50 and < 60 (c) < 50
20. Implement Linear Regression.
21. Implement K-Nearest Neighbours algorithm.
22. Implement Naive Bayes algorithm.
23. Implement Decision Tree algorithm.
24. Implement Support Vector Machine.
25. Implement Logistics Regression.
26. Implement ANN using MNIST dataset.