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| **Practical Assignment LP-III No(DAA,ML,BT)**  **Program List** |
| **Group A** |
| **A(1)Write a program non-recursive and recursive program to calculate Fibonacci numbers and analyze their time and space complexity** |
| **A(2) Write a program to implement Huffman Encoding using a greedy strategy.** |
| **A(3) Write a program to solve a fractional Knapsack problem using a greedy method** |
| **A(4) Write a program to solve a 0-1 Knapsack problem using dynamic programming or branch and bound strategy.** |
| **A(5) Design n-Queens matrix having first Queen placed. Use backtracking to place remaining Queens to generate the final n-queen‘s matrix.** |
| **Group B** |
| **B(1) Predict the price of the Uber ride from a given pickup point to the agreed drop-off location. Perform following tasks: 1. Pre-process the dataset. 2. Identify outliers. 3. Check the correlation. 4. Implement linear regression and random forest regression models. 5. Evaluate the models and compare their respective scores like R2, RMSE, etc.** |
| **B(2) Classify the email using the binary classification method. Email Spam detection has two states: a) Normal State – Not Spam, b) Abnormal State – Spam. Use K-Nearest Neighbors and Support Vector Machine for classification. Analyze their performance.** |
| **B(3) Implement Gradient Descent Algorithm to find the local minima of a function. For example, find the local minima of the function y=(x+3)² starting from the point x=2.** |
| **B(4) Implement K-Nearest Neighbors algorithm on diabetes.csv dataset. Compute confusion matrix, accuracy, error rate, precision and recall on the given dataset.** |
| **B(5)Implement K-Means clustering/ hierarchical clustering on sales\_data\_sample.csv dataset. Determine the number of clusters using the elbow method.** |
| **Group C** |
| **C(1) Write a smart contract on a test network, for Bank account of a customer for following operations: • Deposit money • Withdraw Money • Show balance** |
| **C(2)Write a program in solidity to create Student data. Use the following constructs:**  **• Structures • Arrays • Fallback Deploy this as smart contract on Ethereal and Observe the transaction fee and Gas values.** |