Computer Engineering
Data Mining – 3170716
Even-2025

Assignment -1

Sr.No	Topic	CO coverage
1	Implement a basic video compression using an open-source library and analyze the difference in bitrate and visual quality before and after compression.	CO1,CO3
2	Apply Discrete Wavelet Transform to compress a grayscale medical image (e.g., MRI scan).	CO1,CO3
3	Implement at least two lossless compression algorithms	CO1
4	Using a labeled dataset perform dimensionality reduction using both PCA and LDA. Perform the following tasks: • Visualize the results of PCA and LDA side-by-side in a 2D plot. • Discuss the differences in the data representation by PCA and LDA. • Analyze which method works better for this specific dataset and justify why.	CO1,CO3
5	Choose a real-world dataset and Implement Improved apriori algorithm with at least two improvement techniques (e.g., hash-based candidate generation, transaction reduction) and compare the execution time and accuracy with the basic Apriori implementation.	CO2,CO3

Instructions:
- Assignment must be implemented and printed on both sides of the paper.
- Assignment must be submitted on or before **3rd March 2025.**
- Assignment will not be accepted after the submission deadline under any circumstances.

Assignment Formatting Instructions
- Use font Times New Roman, size 12 with 1.5 line spacing.
  Headers:
- Right Header: Enrollment Number
- Left Header: Student Name
- Middle Header: Assignment-1
  Footers:
- Left Footer: Subject Name
- Right Footer: Page No.