

DAIDS-2-02T: Data Mining & Visualization

Total Marks: 100
 External Marks: 70
 Internal Marks: 30
 Credits: 6
 Pass Percentage: 40%

Course: Data Mining & Visualization	
Course Code: DAIDS-2-02T	
Course Outcomes (COs)	
After the completion of this course, the students will be able to:	
CO1	Understand Data Warehouse fundamentals and Data Mining tools.
CO2	Understand Data Mining Techniques
CO3	Apply clustering methods like K means, hierarchical clustering, agglomerative clustering, divisive clustering to solve problems and evaluate clusters
CO4	Gain knowledge related to application areas of data mining
CO5	Understand the components involved in data visualization design.

Detailed Contents:

Module	Module Name	Module Contents
Module I	Introduction to Data Mining	Data Mining: Introduction, Scope, What is Data Mining; How does Data Mining Works, Predictive Modeling; Data Mining and Data Warehousing; Architecture for Data Mining; Profitable Applications; Data Mining Tools; Data Pre-processing: Overview, Data Cleaning, Data Integration and Transformation, Data Reduction, Discretization and Concept Hierarchy Generation.
Module II	Data Mining Techniques	Data Mining Techniques: An Overview, Data Mining Versus Database Management System, Data Mining Techniques- Association rules, Classification, Regression, Clustering, Neural networks.
Module III	Clustering	Clustering: Introduction, Cluster Analysis, Clustering Methods- K means, Hierarchical clustering, Agglomerative clustering, Divisive clustering, evaluating clusters.
Module IV	Applications of Data Mining	Applications of Data Mining: Introduction, Business Applications Using Data Mining- Risk management and targeted marketing, Customer profiles and feature construction, Medical applications (diabetic screening), Scientific

		Applications using Data Mining, Other Applications.
Module V	Data Visualization	Data Visualization: Introduction, Acquiring and Visualizing Data, Simultaneous acquisition and visualization, Applications of Data Visualization, Keys factors of Data Visualization (Control of Presentation, Faster and Better JavaScript processing, Rise of HTML5, Lowering the implementation Bar)
Module VI	Exploring the Visual Data Spectrum	Exploring the Visual Data Spectrum: charting Primitives (Data Points, Line Charts, Bar Charts, Pie Charts, Area Charts), Exploring advanced Visualizations (Candlestick Charts, Bubble Charts, Surface Charts, Map Charts, Infographics).

Books

<ol style="list-style-type: none"> 1. Jiawei Han, Micheline Kamber and Jian Pei, "Data Mining Concepts and Techniques", 3rd Edition, 2000 2. Pang-Ning Tan, Michael Steinbach, and Vipin Kumar, "Introduction to Data Mining", Pearson, 2005 3. M. Kantardzic, "Data Mining: Concepts, Models, Methods, and Algorithms", 2nd Edition, Wiley-IEEE Press, 2011 4. Jon Raasch, Graham Murray, Vadim Ogievetsky, Joseph Lowery, "JavaScript and jQuery for Data Analysis and Visualization", 2014 5. Ben Fry, "Visualizing data: Exploring and explaining data with the processing environment", O'Reilly, 2007
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