DATA VISUALIZATION TECHNIQUES LAB
(Professional Elective-III)

Course Code: KG21CD608

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B. Tech. III Year II - Semester

Prerequisites:

Course Objectives: The objectives of this course for the student are to:

1. Understand various data visualization techniques.

2. Gain skills on both design and critique visualizations.

3. Understand role of visualization in data analysis.

4. Understand the components involved in visualization design.

5. Learn the data impacts in the type of visualization.

Course Outcomes: After completion of this course, the students will be able to

CO1: **Illustrate** different data types, visualization types to bring out the insight.

CO2: **Analyze** and bring out valuable insight on a large datasets.

CO3: **Apply** large data sets using various visualization techniques and tools.

CO4: **Identify** the different attributes and show casing them in plots and create various visualizations for geospatial and table data.

CO5: **Create** and interpret plots using R / Python.

List of Experiments:

1. Acquiring and plotting data.

2. Statistical Analysis – such as Multivariate Analysis, PCA, LDA, Correlation regression and analysis of variance.

3. Financial analysis using Clustering, Histogram and Heat Map.

4. Time – series analysis – stock market.

5. Visualization of various massive dataset – Finance - Healthcare – Census – Geospatial.

6. Visualization on streaming dataset (Stock market dataset, weather forecasting).

7. Market - Basket Data analysis - visualization.

8. Text visualization using web analytics.

TEXT BOOKS:

1. Matthew Ward, Georges Grinstein and Daniel Keim, "Interactive Data Visualization Foundations, Techniques, Applications", 2010.

2. Colin Ware, "Information Visualization Perception for Design", 2nd Edition, Margon Kaufmann Publishers, 2004.

REFERENCE BOOKS:

1. Robert Spence "Information visualization – Design for interaction", Pearson Education, 2nd Edition, 2007.

2. Alexandru C. Telea, "Data Visualization: Principles and Practice," A. K. Peters LTD, 2008.