20IT6352A -DATA VISUALIZATION LAB

Course Category:	Program Elective 2	**Credits:**	1.5
Course Type:	Laboratory	**Lecture-Tutorial-Practice:**	0-0-3
Prerequisites:		**Continuous Evaluation:**	30
		Semester end Evaluation:	70
		Total Marks:	100

Course Outcomes	Upon successful completion of the course, the student will be able to:	
	CO1	Understand the visualization pipeline with its relationship to other data
	CO2	Design considerations for the components of the good visualization
	CO3	Construct visualizations for effective data analysis
	CO4	Build interactive dashboards for better decision making

Contribution of Course Outcomes towards achievement of Program Outcomes (1-Low, 2-Medium, 3- High)

CO	PO												PSO		BTL	PI
	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
CO1															2	
CO2	1	1	2								1			2	3	1.5.1, 2.1.2, 3.2.2
CO3		2												3	3	2.1.2
CO4	1		1								1		3		3	1.5.1, 3.2.2

Course Content	**Week 1:** Implement Pie chart, Area Chart and Bubble plot on real-time data
	Week 2: Implement visualization techniques on textual data
	Week 3 & 4: Implementing data visualization using R 1. Find the data distributions using box and scatter plot. 2. Find the outliers using plot. **3.** Plot the histogram, bar chart and pie chart on sample data.
	Week 5 & 6: Implementing basic operations in Tableau to get accustomed to its interface and Emphasizing the Results and Map View [1] Tableau Workspace, Connecting to a Data Source, Creating a view and Refining the view [2] Adding Filters to the view, Adding Colors to the view and Key Findings [3] Building a Map View, Getting into details and Identifying the Key PInts
	Week 7: Creating a dashboard and building story to showcase stories in presentation mode [1] Creating a dashboard and Adding Interactiveness [2] Building a Story and Making a Conclusion
	Week 8: Tracking Twitter data to see how fast information spreads online: Create a data visualization to understand the spread of information and miss information insights of individual tweets online.

	Week 9: Loan risk analysis : Create visualization to analyze bank loan data to assess the risk of loan defaulters.
	Week 10: Motivate sales teams by modelling commission rates: Create a visualization to explore the relationships between compensation type, commission for sales people to motivate them.
Text books and Reference books	**Text Book(s):** [1] Andy Kirk, "Data Visualization: a successful design process", Packt Publishing (26 December 2012) [2] Ryan Sleeper, Practical Tableau, O'Reilly Media, Inc. April 2018. **Reference Books:** [1]. Chakrabarti, S,"Mining the web: Discovering knowledge from hypertext data ", Morgan Kaufman Publishers, 2003. Fry ,Vilisualizing data, Sebastopo, O'Reily, 2007.
E-resources and other digital material	[1]. Dr. GauravDixit,Department of Management Studies, Indian Institute of Technology, Roorkee: https://nptel.ac.in/courses/110107092/7,2017 [2]. P Adam Marcus, and Eugene Wu. RES.6-009 How to Process, Analyze and Visualize Data. January IAP 2012. Massachusetts Institute of Technology: MIT Open Courseware, https://ocw.mit.edu.,2012 [3] Data Visualization in R Basic graphics, Prof.ShankarNarasimhan, RagunathanRengasamy,IIT Madras, https://nptel.ac.in/courses/106106179/11,2016 [4] Statistics and Visualization for Data Analysis and Inference, Dr. Ed Vul, Dr. Mike Frank, Massachusetts Institute of Technology, https://ocw.mit.edu/resources/res-9-0002-statistics-and-visualization-for-data-analysis-and-inference-january-iap-2009/, 2009.

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