

DATA VISUALIZATION LAB		Semester	V
Course Code	BAIL504	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	0:0:2:0	SEE Marks	50
Credits	01	Exam Hours	100
Examination type (SEE)	Practical		
Course objectives:			
- Understand the Importance of data Visualization for business intelligence and decision making. - Learn different approaches to understand the importance of visual perception. - Learn different data visualization techniques and tools. - Gain knowledge of effective data visuals to solve workplace problems.			
Sl.NO	Experiments		
1	Getting Started - Tableau Workspace, Tableau terminologies, basic functionalities.		
2	Connecting to Data Source – Connecting to Database, Different types of Tableau Joins.		
3	Creating a View - formatting charts, adding filters, creating calculated fields and defining parameters.		
4	Dashboard Design and Storytelling – Components of Dashboard, Understanding how to place worksheets in Containers, Action filters and its types.		
5	Introducing Power BI –Components and the flow of work. Power BI Desktop Interface-The Report has five main areas.		
6	Querying Data from CSV - Query Editor, Connecting the data from the Excel Source, Clean, Transform the data.		
7	Creating Reports & Visualizations - Different types of charts, Formatting charts with Title, Colors.		
8	Dashboards - Filters in Power BI, Formatting dashboards.		
9	Analysis of revenue in sales dataset: i) Create a choropleth map (fill the map) to spot the special trends to show the state which has the highest revenue. ii) Create a line chart to show the revenue based on the month of the year. iii) Create a bin of size 10 for the age measure to create a new dimension to show the revenue. iv) Create a donut chart view to show the percentage of revenue per region by creating zero access in the calculated field. v) Create a butterfly chart by reversing the bar chart to compare female & male revenue based on product category. vi) Create a calculated field to show the average revenue per state & display profitable & non-profitable state. vii) Build a dashboard.		
10	Analysis of GDP dataset: i) Visualize the countries data given in the dataset with respect to latitude and longitude along with country name using symbol maps. ii) Create a bar graph to compare GDP of Belgium between 2006 – 2026. iii) Using pie chart, visualize the GDP of India, Nepal, Romania, South Asia, Singapore by the year 2010. iv) Visualize the countries Bhutan & Costa Rica competing in terms of GDP.		

	v) Create a scatter plot or circle views of GDP of Mexico, Algeria, Fiji, Estonia from 2004 to 2006. vi) Build an interactive dashboard.
11	Analysis of HR Dataset: i) Create KPI to show employee count, attrition count, attrition rate, attrition count, active employees, and average age. ii) Create a Lollipop Chart to show the attrition rate based on gender category. iii) Create a pie chart to show the attrition percentage based on Department Category- Drag department into colours and change automatic to pie. Entire view, Drag attrition count to angle. Label attrition count, change to percent, add total also, edit label. iv) Create a bar chart to display the number of employees by Age group, v) Create a highlight table to show the Job Satisfaction Rating for each job role based on employee count. vi) Create a horizontal bar chart to show the attrition count for each Education field Education field wise attrition – drag education field to rows, sum attrition count to col, vii) Create multiple donut chart to show the Attrition Rate by Gender for different Age group.
12	Analysis of Amazon Prime Dataset: i) Create a Donut chart to show the percentage of movie and tv shows ii) Create a area chart to shows by release year and type iii) Create a horizontal bar chart to show Top 10 genre iv) Create a map to display total shows by country v) Create a text sheet to show the description of any movie/movies. vi) Build an interactive Dashboard.
Course outcomes (Course Skill Set): At the end of the course the student will be able to: 1. Design the experiment to create basic charts and graphs using Tableau and Power BI. 2. Develop the solution for the given real world problem. 3. Analyze the results and produce substantial written documentation.	