1. What is BI (Business Intelligence), explain with example?

2. What is Tableau? State its products.

3. What are the features of Tableau?

4. Explain Tableau workflow.

5. What are the different Tableau products available in the market?

6. State the difference between Tableau Desktop and Tableau Public.

### Tableau Shelf and Card

1. What are the different shelves and cards available in Tableau?

2. Use the [Insurance.csv](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/insurance.xlsx) file, connect with the insurance sheet.

3. Using the row and column shelf, display incident type-wise total claim amount.

4. Using the marks card, add the incident severity for each incident type-wise total claim amount.

5. Break down the incident severity for each incident type-wise vehicle claim with respect to policy number.

6. Filter out gender-wise incident severity for each incident type-wise vehicle claim with respect to policy number.

**Data Types in Tableau**

1. What is the difference between dimension and measure?

2. How to change the datatype at sheet level or data pane?

3. Change the datatype of the Auto year column from number to date.

4. Display day-wise policy bind date vs capital gain using discrete and continuous axes.

5. What are the measure names and their values available in the dataset?

6. Apply blend and join for Customer, Customer Order, and Product details sheets to display Customer ID, Order ID, Product ID, and Product Name without any data loss.

\*\*Dataset Links:\*\*

- Insurance Dataset: [insurance.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/insurance.xlsx)

- Product Dataset: [Products.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/Products.xlsx)

### Connecting to and Preparing Data

1. What is the difference between Live connection and Extract connection?

2. What is the difference between data blending and joining in Tableau?

3. What are the limitations of data blending in Tableau?

4. How many maximum tables can you join in Tableau?

\*\*Attempt the following:\*\*

5. Write the steps for connecting Tableau to any Excel and CSV file and provide screenshots for each step.

\*\*Attempt the following:\*\*

6. Apply Blend and Join for Customer, Customer Order, and Product details sheets to display Customer ID, Order ID, Product ID, and Product Name without any data loss.

\*\*Dataset:\*\*

- Customer: [Customer.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/Customer.xlsx)

- Customer Order: [Customer Order.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/Customer+Order.xlsx)

- Product: [Product.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/Product.xlsx)

### Organizing and Simplifying Data

\*\*Answer the following:\*\*

1. Explain the types of sorting supported by Tableau.

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\*\*Using `insurance.xlsx` file, solve the following:\*\*

1. How to expand the scope of filter from sheet level to workbook level?

2. Remove the "?" from the property damage column using a Dimension filter.

3. Create a hierarchy with Incident Type, Auto Make, and Auto Model. Rename it as "Incident Info."

4. Using the Incident Info hierarchy, show how much capital loss occurred for each auto model.

5. Create a group for Policy numbers: P-10, P-11, P-12, P-13, P-14, P-15, P-16, and P17-P99 for Policy numbers starting with 10, 11, and so on up to 99.

6. Use this created policy group to check the average age of customers for Policy bind dates in 2013, 2014, and 2015.

7. Using a set on Insured relation, display the top 2 policy annual premium amounts.

\*\*Dataset Link:\*\* [insurance.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/insurance.xlsx)

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\*\*Note:\*\* Upload assignment in PDF format with required screenshots of code and corresponding output.

### Learn Tableau Built-In and Custom Chart

\*\*Answer the following:\*\*

1. What is a data highlighter? Explain with any one example.

---

\*\*By Using `insurance.csv` file, attempt the following:\*\*

1. Create a donut chart for incident severity that shows percentages of policy annual premium.

2. Create a bullet graph showing gender-wise capital gain, which also indicates 60%, 80%, and average property claim.

3. Create a motion chart that displays total claim amount versus policy deductible for each auto model.

4. Compare all KPIs in the given dataset.

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\*\*Dataset Link:\*\* [insurance.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/insurance.xlsx)

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\*\*Note:\*\* Upload Assignment in PDF format with required code screenshots and corresponding output screenshots.

### Table Calculations

\*\*Answer the following:\*\*

1. What is the difference between Include LOD and Exclude LOD?

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\*\*Using `insurance.csv`, attempt the following:\*\*

1. Write a Fixed LOD that calculates incident state-wise injury claims.

2. Create a visual for incident severity, collision type, and policy CSL. Display average capital losses while neglecting policy CSL.

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\*\*Dataset Link:\*\* [insurance.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/insurance.xlsx)

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\*\*Note:\*\* Upload Assignment in PDF format with required code screenshots and corresponding output screenshots.

### Analytics

\*\*Answer the following:\*\*

1. Explain the difference between a reference line and a reference band.

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\*\*Using `insurance.csv`, attempt the following:\*\*

1. Using a reference line, display the average property claim for each authorized contact.

2. Using a box and whisker plot, display make-wise vehicle claims for each policy number.

3. Forecast the total claim amount for the years 2015, 2016, 2017, 2018, and 2019.

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\*\*Data Set Link:\*\* [insurance.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/insurance.xlsx)

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\*\*Note:\*\* Upload Assignment in PDF format with required code screenshots and corresponding output screenshots.

### Tableau Dashboard Assignment

\*\*Create a dashboard that includes:\*\*

1. \*\*KPI Metrics:\*\*

- Total Policies

- Average Annual Premium

- Total Injury Claim

- Total Property Claim

- Total Vehicle Claim

2. \*\*Selection Panels:\*\*

- Model Selection

- Incident Type Legend

- Claim Type Legend

3. \*\*Charts:\*\*

- \*\*Scatter Plot:\*\* Analyze model-wise capital gain and loss.

- \*\*Pie Chart:\*\* Show gender-wise percentage of bodily injury.

- \*\*Side-by-Side Chart:\*\* Display total types of claims contacted to authority.

4. \*\*Action Filters:\*\*

- \*\*Filter Action:\*\* Pie chart that filters the side-by-side bar chart based on gender selection.

- \*\*Go to Sheet and Highlight Action:\*\* Click on the side-by-side bar chart to shift control to the second dashboard, highlighting the respective selected bar data.

5. \*\*Dashboard Title:\*\*

- Create a title for the dashboard displaying the current date and time.

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\*\*Dataset Link:\*\* [insurance.xlsx](https://itv-contentbucket.s3.ap-south-1.amazonaws.com/Exams/Tableau/insurance.xlsx)

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\*\*Note:\*\* Upload the assignment in PDF format with required code screenshots and corresponding output screenshots.

### Performance Improvement of Dashboard

\*\*Using Insurance.csv, attempt the following:\*\*

1. \*\*Explain How to Improve Dashboard Performance:\*\*

- \*\*Tableau Public:\*\*

- \*\*Reduce Data Size:\*\* Limit the amount of data loaded by filtering unnecessary fields or using extracts.

- \*\*Optimize Calculations:\*\* Minimize the use of complex calculations in the view. Use calculated fields only when necessary.

- \*\*Limit Visuals:\*\* Avoid overcrowding the dashboard with too many visualizations; focus on key metrics.

- \*\*Tableau Desktop:\*\*

- \*\*Use Extracts:\*\* Create extracts instead of live connections when possible to improve performance.

- \*\*Optimize Queries:\*\* Simplify data source queries by removing unused fields and aggregating data at the source.

- \*\*Utilize Background Tasks:\*\* Schedule data refreshes during off-peak hours to reduce load during active use.

- \*\*Tableau Server:\*\*

- \*\*Performance Monitoring:\*\* Regularly check performance metrics in Tableau Server to identify slow dashboards and improve them.

- \*\*Load Balancing:\*\* Use load balancing to distribute traffic and prevent server overload.

- \*\*Caching:\*\* Enable caching options to improve load times for frequently accessed dashboards.

2. \*\*Upload the Score of Run Optimizer:\*\*

- After analyzing the dashboard with Tableau’s Performance Recording tool, capture and document the score.

- \*\*Take Action Needed:\*\* Based on the optimizer results, implement recommended changes, such as adjusting extracts, optimizing filters, or revising calculations.

- \*\*Review for Your Dashboard:\*\* Summarize findings from the optimizer, including specific recommendations to enhance performance.

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\*\*Note:\*\* Upload the assignment in PDF format with required code screenshots and corresponding output screenshots.