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Aim: Creating Visualizations using D3.js on a Finance Dataset

Objectives:

- To explore and visualize a dataset related to Finance/ Banking/ Insurance/ Credit using D3.js.
- To create basic visualizations (Bar chart, Pie chart, Histogram, Timeline chart, Scatter plot, Bubble plot) to understand data distribution and trends.
- To create advanced visualizations (Word chart, Box and Whisker plot, Violin plot, Regression plot, 3D chart, Jitter) for deeper insights and complex relationships.
- To perform hypothesis testing using the Pearson correlation coefficient to evaluate relationships between numerical variables in the dataset.

Description:

Dataset used is Insurance Dataset available at

https://www.kaggle.com/datasets/ravalsmit/insurance-claims-and-policy-data

Customer ID:A unique identifier assigned to each customer. Useful for referencing individual records.

Age: The age of the customer. Important for understanding demographic trends and risk assessment.

Gender: The gender of the customer. May be relevant for analyzing risk profiles and insurance needs.

Marital Status: The marital status of the customer. Can influence risk and insurance product preferences.

Occupation: The profession of the customer. Helps in understanding income levels and risk factors associated with different jobs.

Income Level: The income level of the customer. Critical for assessing the ability to pay premiums and potential insurance needs.

Education Level: The highest level of education attained by the customer. May correlate with income and risk awareness.

Geographic Information: The region or area where the customer resides. Geographic location can impact risk profiles due to environmental factors.

Location: Specific location details (city, town, etc.). Similar significance as geographic information.

Behavioral Data: Data reflecting customer behavior or preferences. Useful for tailoring services and marketing strategies.

Purchase History: Records of previous purchases. Important for understanding customer loyalty and product preferences.

Policy Start Date: The date when the insurance policy was initiated. Useful for tracking policy duration and renewal patterns.

Policy Renewal Date: The date when the policy is due for renewal. Important for analyzing customer retention.

Claim History: Records of claims made by the customer. Essential for assessing risk and claim frequency.

Interactions with Customer Service: The number of times the customer has interacted with customer service. Can indicate customer satisfaction and engagement.

Insurance Products Owned: The types of insurance products the customer currently owns. Relevant for cross-selling and upselling strategies.

Coverage Amount: The total coverage amount of the insurance policy. Critical for understanding policy value and risk exposure.

Premium Amount: The amount the customer pays for their insurance policy. Important for revenue analysis and pricing strategies.

Deductible: The amount the insured must pay out of pocket before the insurance kicks in. Influences customer choice and risk behavior.

Policy Type: The type of insurance policy (e.g., life, health, auto). Useful for segmenting products and analyzing market trends.

Customer Preferences: Preferences related to services or products. Important for customer relationship management.

Preferred Communication Channel: The customer's preferred method of communication (e.g., phone, email, in-person). Useful for improving customer interactions.

Preferred Contact Time: The time of day the customer prefers to be contacted. Helps in scheduling interactions effectively.

Preferred Language: The language the customer prefers for communication. Important for personalized customer service.

Risk Profile:A classification of the customer based on risk factors. Essential for underwriting and risk assessment.

Previous Claims History:A record of past claims made by the customer. Influences risk evaluation and premium pricing.

Credit Score: The customer's credit score, reflecting their creditworthiness. Important for financial assessment and premium calculations.

Driving Record: The customer's driving history (e.g., clean, violations). Relevant for auto insurance risk assessment.

Life Events: Significant life events that may affect insurance needs (e.g., marriage, childbirth). Useful for targeted marketing.

Segmentation Group:A grouping of customers based on shared characteristics. Helps in targeted marketing and analysis.