**TICKET MANAGEMENT VISUALIZATION PROJECT**

<https://www.kaggle.com/datasets/mohamedharris/ticket-management-dataset-cybersecurity?resource=download>

**Dataset Overview**

This fictitious dataset contains the datapoints on tickets that were raised by customers in North America to reach out to a cybersecurity team for consultation. It is assumed that the cybersecurity team provides consultation on various information security and data privacy related matters upon raising a request.

**Goals and Questions – Analysis of Consulting by Category**

1. Evaluate which categories are doing better.
   1. How does the sale of different categories vary by state?
   2. Which categories have higher customer satisfaction? Which have lower?
2. Analyze how good/bad categories impact demand.
   1. How does the time to completion a request (completed date – created date) vary between good and bad categories?
   2. How has the change across time between created tickets compared between good and bad categories?
3. Check if any other variables help explain our conclusions (priority, skill team, outcome, reached via)

**Data Cleaning + Exploratory Data Analysis Steps**

1. Delete variables (columns) not to be used
2. Check for missing values in dataset
3. Goal 1
   1. Question 1a
      1. Check values in ‘State’ and ‘Category’ columns. Modify columns if there are too many similar values.
      2. Visualize distribution of tickets by state and by category (if there are states and/or categories with much more demand than others)
   2. Question 1b
      1. Transform ‘Customer Rating’ variable into ordinal numerical type (2 - ‘Unsatisfactory (2)’; 3 – ‘Satisfactory (3)’; 4 – ‘Good (4)’; 5 – ‘Excellent (5)’.
      2. Check if all values were converted correctly.
      3. Visualize distribution of ‘Customer Satisfaction’.
4. Goal 2
   1. Question 2a
      1. Check variation in date between first ticket request and last ticket request.
      2. Visualize ‘Create Date’ distribution.

**Category Evaluation Metric**

Measured with 5 factors into account:

* Sale of different categories by state
* Total sales
* Customer satisfaction
* Time for completion
* Change across time