# **Industry Project Week – Data Analysis Bootcamp**

**Customer Support Analysis for a Subscription-based Business**

You have been employed by a subscription-based business, such as a streaming service or a software-as-a-service (SaaS) company, to analyse customer behaviour. The company is facing a significant challenge with retaining customers, and they want you to identify key factors influencing customer support and provide actionable insights to predict customer support patterns.

You will be provided with a dataset containing information on customer demographics, usage patterns, subscription plans, customer support interactions, and the status (churned or active) of each customer. The dataset covers a period of the last 12 months. The dataset includes columns like:

* **CustomerID** for identification,
* **Age** and **Gender** for demographics,
* **SubscriptionPlan** for the type of subscription,
* **UsageFrequency** for how often the customer uses the service,
* **CustomerSupportInteractions** for the number of interactions with customer support,
* M**onthlySpend** for the amount spent each month, and
* **ChurnStatus** to indicate whether the customer has churned (Yes) or is still active (No).

A screenshot of a computer

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**Tasks:**

1. **Data Exploration:**
   * Explore, clean and encode the dataset appropriately to ensure data quality and model efficiency.
   * Summarise key statistics and visualisations to gain insights into the overall customer base.
2. **Feature Analysis:**
   * Identify potential features that may influence monthly customer support (e.g., age, usage frequency, subscription plan, churn).
   * Perform a correlation analysis to understand relationships between features.
3. **Monthly Spent Prediction Model:**
   * Build a predictive model (i.e. multiple regression analysis) to forecast customer support interactions.
   * Evaluate the model's initial performance using appropriate metrics (coefficient of determination, etc).
   * If necessary, adjust the model to ensure that only predictors with high statistical significance are included. Produce all work to evidence any model improvements and provide appropriate explanations.
4. **Insights and Recommendations:**
   * Analyse the results of the monthly customer support prediction model.
   * Provide actionable insights and recommendations for the business to improve customer support.
5. **Communication:**
   * Prepare a concise report or presentation summarising your findings and recommendations for a non-technical audience.