**Decision Science –Team Methane**

In this exam, you will work with a **beef dataset** from the internet (drive link), containing various methane mitigation measures (e.g., dietary manipulation) and their corresponding methane emissions from worldwide beef experiments. You aim to determine **which methane mitigation strategies are most effective** in reducing emissions.

**Tasks**

1. **Data Preprocessing**
   * Clean the dataset by handling missing values, removing duplicates, and correcting inconsistencies.
   * Standardize variable names and data formats for consistency.
   * Document all preprocessing steps clearly.
2. **Data Reshaping & Transformation**
   * Modify the dataset as needed using techniques from **Module 2**, such as pivoting, melting, or slicing.
   * Ensure the data is structured appropriately for analysis.
3. **Exploratory Data Analysis (EDA) & Visualization**
   * Generate summary statistics and key insights.
   * Use appropriate visualizations (e.g., histograms, boxplots, scatterplots) to illustrate trends in methane emissions across different mitigation strategies.
   * Identify the most effective interventions based on the data.

Your final output should include **code, visualizations, and a brief discussion** of your findings.

**Decision Science –Team Dairy**

1. Visualize lactation curve (milk fat, protein, gcc ) 1 &2+

2. Visualize culling use function to simulate

3 .BW visualization for Heifers and Cows

**EXAM ONE**

**Team Economics**

Dataset:

The team will work with Cow-calf production and Stocker Economics data from existing AgriLife databases.

Tasks to complete:

1. Collate Data from specified sources.
2. Using appropriate Python libraries, prepare the dataset for analysis. Check for missing values, duplicates, and complete data preprocessing.
3. Compare the CowCalf and Stocker Economics datasets and record your observations.
4. Slice, splice, sort the dataset, and generate insights through visualization. Record your observations.
5. Create visualizations showing morbidity and mortality, and profitability.