**Introduction**

This shiny web application was designed to facilitate data preprocessing, feature engineering, and exploratory data analysis. This interactive tool allows users to upload datasets, clean and transform data, generate new features, and visualize data insights efficiently. The application supports multiple file formats, including CSV, Excel, JSON, and RDS.

**Application Functionalities**

**1. Upload Data**

* Users can upload datasets in various formats or select built-in datasets (mtcars, iris).
* Options to specify file header, separator, and quotation settings for CSV files.
* Preview of the uploaded dataset is displayed.

**How to Use the Application**

1. **Upload Data**: Navigate to the "Upload Data" tab, upload a file, or select a built-in dataset.
2. **Clean Data**: Use the "Data Cleaning" tab to remove duplicates, handle missing values, scale numeric data, and encode categorical variables.
3. **Feature Engineering**: In the "Feature Engineering" tab, create new features and apply transformations to existing variables.
4. **Perform EDA**: In the "Exploratory Data Analysis" tab, select variables, apply filters, generate plots, and analyze correlations.

**Deployment**

The application is hosted on: