**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.

1. **Clean and Preprocess Data**:

* Remove duplicate rows.
* Users can select one of the preprocessing actions (handle inconsistency, handle missing value, normalization and encoding, etc) and apply to a chosen column.
* Preview of the cleaned dataset and its summary are displayed.

**How to Use the Application**

1. **Upload Data**: Navigate to the "Upload Data" tab, upload a file, or select a built-in dataset.
   1. Option 1: Use sample dataset:
      1. Select mtcar or iris at "Select Built-in Dataset" section then click on button "Load Built-in Dataset".
   2. Option 2: Upload personal data:
      1. Choose a local file at "Choose File to upload" section;
      2. If the file is in .csv, user should choose to tick "CSV File has Header" or not based on the format of the .csv, and select one option at sections "Separator in CSV File" and "Quote in Data File" respectively; no operation is needed for other formats of files;
      3. Click on button "Upload Data".

Date Preview will be shown on the right.

1. **Clean and Preprocess Data**: Navigate to the "Data Cleaning" tab to remove duplicates, handle missing values and outliers, scale or normalize numeric data, and encode categorical variables.
   1. Optionally, click on button "Remove Duplicates" to remove duplicate rows.
   2. Select a variable to conduct preprocessing.
   3. Select a preprocessing action. If user chooses "Handle Inconsistencies", a fix option should be chosen at "Select Fixes" section; if user chooses "Remove Outliers", the Z-score should be indicated at " Outlier Removal Threshold " section.
   4. Click on button "Preprocess Variables".

Cleaned Data Preview and Summary Statistics will be shown on the right.

1. **Feature Engineering**: In the "Feature Engineering" tab, create new features and apply transformations to existing variables.
2. **Perform EDA**: In the "Exploratory Data Analysis" tab, select variables, apply filters, generate plots, and analyze correlations.