**Feature Engineering Demonstration**

**Objective**:

To demonstrate the basics of feature engineering and selection using a real-world dataset, without delving deeply into technical implementation.

**Tools**:

Python (with libraries like pandas and scikit-learn)

Jupyter Notebook (or any Python IDE)

**Dataset**:

Use a simple, well-known dataset like the Titanic dataset from Kaggle.

**Steps**:

Data Exploration (Demonstration)

Briefly showcase the dataset using pandas.

Highlight different types of features (numerical, categorical).

Feature Engineering (Demonstration)

**Creating New Features:**

Demonstrate creating a new feature, like "FamilySize," by combining SibSp and Parch.

Converting Categorical to Numerical:

Show how to convert a categorical variable like "Sex" into a numerical format.

**Feature Selection (Discussion)**

Engage in a discussion about which features might be important and why.

Highlight the use of simple techniques like correlation analysis to guide feature selection.

**Data Visualization (Optional)**

Use basic plots to visualize some feature relationships.

**Conclusion and Discussion**

Conclude with a discussion on the importance of feature engineering and selection in Machine Learning.

**Deliverables**:

A demonstrative Jupyter Notebook presentation.