Assignment 3: Feedforward Neural Network

Task 1: Data Preprocessing:

Read the provided Excel file into a Pandas DataFrame.
Perform exploratory data analysis to understand the features and target variable.
Handle any missing values or data anomalies.
Normalize or standardize the feature data.
Split the dataset into training and test sets.

Task 2: Create the Neural Network Model:

Design a feedforward neural network with at least two hidden layers.
Use appropriate activation functions (e.g., ReLU for hidden layers, sigmoid for output if it's binary classification).
Choose a suitable loss function and optimizer for binary classification.

Task 3: Train the Model:

Train the model on the training dataset.
Implement batch training and use a validation split to monitor overfitting.

Task 4: Evaluate the Model:

Evaluate the model's performance on the test set.
Calculate and display performance metrics like accuracy, precision, recall, and F1-score.
Perform feature selection or engineering to improve model performance.