Wireframe Documentation for Fraud Transaction Detection System

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Homepage

Section Description

Pop-up Window (User Interest Input)

- A pop-up window prompts users to input their interest in fraud transaction detection.

Pop-up Window (User Details Input)

- Another pop-up window collects user details necessary for the system's operation.

Recommendation Display

- Displays tailored recommendations based on the user's inputs directly on the homepage.

About Page

Section Description

Heading

- A section featuring a headline about the fraud transaction detection system.

Informative Text

- Provides detailed information about the system, its purpose, and benefits.

Data Validation and Data Insertion

Section Description

File Validation

- Validates the `fraud_train` and `fraud_test` datasets for integrity and structure.

Column Count Verification

- Ensures datasets have the correct number of columns as per the schema.

Column Names Verification

- Verifies that column names match the expected schema.

Data Type Validation

- Validates the data types of columns in both datasets.

Handling Missing Values

- Appropriately handles any missing values in the datasets.

Model Training

Section Description

Data Extraction

- Extracts data from the `fraud_train_data` table for model training.

Data Preprocessing

- Preprocesses the data, including handling missing values, encoding categorical variables, and scaling features.

Model Selection

- Trains various machine learning models (e.g., SVM, Random Forest, XGBoost) and optimizes them using cross-validation.

Model Evaluation

- Evaluates models using metrics such as accuracy, precision, recall, and ROC-AUC score.

Prediction

Section Description

Data Extraction

- Extracts data from the `fraud_test_data` table for model prediction.

Data Preprocessing

- Applies the preprocessing steps used during training to the `fraud_test` dataset.

Model Prediction

- Uses the trained model to predict fraud labels for transactions in the `fraud_test` dataset.

Performance Evaluation

- Evaluates model performance using metrics such as accuracy, precision, recall, and ROC-AUC score.

Conclusion

This structured wireframe document outlines the key sections and functionalities of the fraud transaction detection system, ensuring clarity in the design and development phases. Each section provides a clear description of its purpose and content, facilitating seamless integration and development of the system.