**Problem Statement – E-Commerce Sector: Online Order Fraud Detection**

**Objective:**  
Detect fraudulent online orders in an e-commerce setting by analyzing transaction and user behavior data.

**Key Tasks:**

1. **Data Ingestion & Cleaning:**
   * Use or simulate a dataset containing order details (user ID, product ID, location, payment type, device info, etc.).
2. **Feature Engineering:**
   * Generate features such as order value deviation, payment method frequency, device change count, and delivery mismatch (billing vs. shipping address).
3. **Model Training:**
   * Train both supervised (e.g., XGBoost) and unsupervised (Isolation Forest) models.
   * Compare results and select the best-performing model.
4. **Fraud Risk Scoring:**
   * Produce a fraud likelihood score for each order.
   * Flag suspicious orders for manual review.
5. **Evaluation & Visualization:**
   * Plot confusion matrix and fraud-risk heatmap (region-wise or device-wise).

**Deliverable:**  
A deployable pipeline that detects and scores online orders for potential fraud.