RETAIL CHURN FORECASTING AND LOYALTY STRATEGY FOR A NATIONAL FASHION CHAIN

1. Background and Problem Statement:

A national fashion retail chain with over 150 stores and a growing e-commerce platform experienced declining repeat customer rates and stagnant loyalty program engagement. Despite frequent campaigns, over 63% of customers made only one purchase in a 12-month period. The leadership lacked visibility into **which customers were likely to churn** and how to personalize loyalty strategies to retain them. The company initiated a churn prediction and loyalty optimization project focused on identifying at-risk customers and activating targeted retention interventions.

2. Objectives:

- To define churn based on transaction inactivity and model churn risk
- To identify key drivers of churn across online and in-store channels
- To develop customer risk scores and segment the database for targeted loyalty outreach
- To recommend loyalty program enhancements that prioritize high-risk, high-value segments

3. Methodology:

3.1 Data Collection and Preparation

- **Data Scope:** 1.2 million customers across POS and online platforms over 24 months
- Fields used:
    - Transaction date and amount
    - Product category and discount
    - Channel (store vs. online)
    - Loyalty program enrollment and points
    - Return frequency
    - Time since last purchase
- Data cleaning and transformation handled in SQL and Python (pandas)

- Integration of online and in-store IDs through a common loyalty program ID

3.2 Churn Definition and Segmentation

- Churn was defined as **no purchase activity for 180+ days**
- Customers segmented into three groups:
    - **Active** (purchased in last 90 days)
    - **At-risk** (last purchase 90–180 days ago)
    - **Churned** (180+ days inactive)

3.3 Predictive Modeling

- Applied **logistic regression** and **XGBoost classifier** to model churn probability
- Model trained on labeled data and validated with 70/30 train-test split
- ROC-AUC of best model: **0.84**

4. Results:

4.1 Churn Distribution

Segment	Customers	Avg. Order Value	Churn Probability	Key Channel
Active	210,500	\$58.20	<25%	Online
At-risk	380,200	\$64.75	26–60%	In-store
Churned	609,300	\$47.10	>60%	Mixed

- Highest churn observed among **in-store-only customers with no online account**
- **Multi-channel shoppers** had 2x lower churn probability
- Customers with high discount dependence (used >4 coupons/year) were 34% more likely to churn

4.2 Top Churn Predictors

Predictor	Importance Score
Time since last purchase	High
Loyalty point inactivity	High
Product return frequency	Medium

Purchase only during sale events	Medium
No email open in last 3 campaigns	Medium

5. Strategic Interventions:

5.1 Loyalty Program Personalization

- Created 3 loyalty personas: **Stylists (fashion-conscious), Value Hunters, and Occasional Buyers**
- Offered **tier-specific perks**:
    - Early access to collection drops for Stylists
    - Birthday and limited-time bonus points for Value Hunters
    - Surprise coupons for inactive Occasional Buyers

5.2 Retargeting Strategy

- At-risk and churned segments uploaded to Meta Ads for **personalized product ads**
- Triggered **SMS reactivation campaigns** to offline customers with no email opens
- Implemented **geo-targeted emails** with store-specific styling events and rewards

5.3 In-Store Digitization

- Added QR codes at checkout for app download and loyalty linking
- Offered **10% off** on next order for in-store-only customers who created online account

6. Outcomes:

- 3-month pilot campaign reduced churn in test cities by **11.3%**
- Loyalty program reactivation rate increased from **7% to 19%**
- Multi-channel usage rose by **22%** in the pilot cohort

7. Future Work:

- Add product return behavior to future churn scores for tighter precision
- Test **gamified loyalty challenges** (e.g., buy in 2 categories in 60 days)
- Expand predictive churn dashboard to regional and store-level managers

8. Stakeholder Relevance:

Academic:

- Case study on retail churn modeling using transactional and behavioral data
- Applies supervised learning (XGBoost) in customer segmentation for strategic CRM courses

Corporate:

- Enables fashion retailers to move beyond reactive email blasts to data-driven customer reactivation
- Aligns loyalty design with customer behavior, improving campaign efficiency and retention ROI