



Smart ATM Cash Forecasting & Real-Time Refill System

SYSTEM ARCHITECTURE DIAGRAM



SYSTEM ARCHITECTURE DIAGRAM – DESCRIPTION

High-Level Architecture Components

1. ATM Switch
 - Sends real-time cash levels
 - Sends withdrawal logs
2. Forecasting Engine
 - ML-based prediction
 - Hourly and daily models
3. Threshold Alert Engine
 - Detects <20% and 20–50% thresholds
4. Route Optimization Engine
 - Map API + priority system
 - Generates shortest path
5. Dashboard UI
 - ATM list + status + graphs
6. Notification Services
 - SMS
 - Email
 - Push notifications
7. Reporting Engine
 - Daily summary
 - Weekly forecast
8. Database
 - Stores ATM data
 - Forecasts
 - Alerts
 - Logs