

Currency Tracker Solution Architecture

Automated Currency Exchange Rate Monitoring & Alert System



1. External Data Source

ExchangeRate-API.com

Real-time Currency Exchange Rates

- Endpoint: /v6/[API_KEY]/latest/[CURRENCY]
- Currencies: USD, EUR, GBP → LKR
- Rate Limit: 1,500 requests/month (Free Tier)
- Protocol: HTTPS / REST API



2. Automation & Orchestration Layer

Power Automate - Main Flow

- 📅 Scheduled Trigger: Daily @ 9:00 AM IST
 - HTTP GET Requests (3x currencies)
 - JSON Parsing & Data Extraction
 - Variable Initialization
 - Threshold Comparison Logic
 - Conditional Alert Triggering
 - Data Storage Operations

Power Automate - Cleanup Flow

- 📅 Scheduled Trigger: Weekly @ Sunday
 - Query Records Older than 7 Days
 - Apply to Each Loop
 - Delete Historical Data
 - Maintain Storage Limits

Core Processing Logic:

1. Data Fetch

API Call → Parse JSON → Extract Rate

2. Threshold Check

IF Rate > Threshold THEN Alert

3. Store & Notify

Update DB → Send Email Alert



3. Data Storage

SharePoint Online List



Table: CurrencyRates

- Currency (Text)
- Rate (Number/Decimal)
- Date (DateTime)
- Threshold (Number/Decimal)
- AlertTriggered (Boolean)
- PreviousRate (Number/Decimal)

Data Retention:

7 Days Historical Data



4. Alert System

Email Notifications



Office 365 Outlook

- Trigger: Threshold Exceeded
- Recipients: Configured Emails
- Content: Rate, Threshold, Date
- Priority: Normal/High

Alert Conditions:

- USD > 330 LKR
- EUR > 370 LKR
- GBP > 420 LKR



5. Presentation Layer (Optional)

Power Apps (Canvas App)

- Latest Exchange Rates Display
- Threshold Configuration UI
- Historical Data Viewer
- Manual Refresh Option
- Mobile-Friendly Interface

Security & Compliance

Authentication

Azure AD / Microsoft 365

API Security

HTTPS, API Key Management

Data Protection

SharePoint Encryption at Rest

Data Flow Summary

API Call



Parse & Process



Check Threshold



Store Data



Send Alert



Display Dashboard