



# Lightweight KYC App for Bharat

**End-to-End Solution for Rural & Semi-Urban India**

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# Problem Statement

**Problem:** Millions in Bharat still face barriers to digital onboarding due to low-end devices, poor connectivity, and limited digital literacy.

**Objective:** Design a **lightweight, offline-friendly, and user-intuitive KYC solution that supports:**

- Multiple KYC options (Digilocker, Documents, Face).
- SDK integration & web redirection for clients.
- Works on low-end phones with limited connectivity.

**Target Users:**

- People living in rural and semi-urban areas.
- Those using smartphones for the first time.
- Users who are not confident with digital tools.

# **Challenges:**

## **Low Digital Literacy:**

Many users are new to smartphones and don't know how to use apps, upload documents, or navigate complicated screens.

## **Limited or Unstable Internet Connectivity:**

In rural areas and small towns, poor or inconsistent internet signals often cause KYC processes to stop before they are finished.

## **Low-End Smartphone Devices:**

Many users have basic phones with limited storage, low memory, and weak processing power, causing apps to crash, run slowly, or not work at all.

# Solution Over View

**Our lightweight KYC app is built with Bharat's rural and semi-urban users in mind, solving their specific problems by offering :**

**Multiple KYC Options:** Supports Digilocker, document uploads like Aadhaar, PAN, Driving License, Voter ID, and face recognition with liveness and face matching for easy and inclusive verification.

**Easy-to-Use Interface:** Features a simple design with voice instructions in local languages, big icons, and clear visuals to help users who are new to digital tools.

**Small, Fast, and Flexible:** The app's SDK is compact (under 10MB), quick to download, and works well on basic phones with limited resources.

**Strong Security and Privacy:** Uses full encryption, gets user consent before using data, and follows Indian data protection laws to keep user information safe.

# UX Design For Bharat

## Designing for Low Literacy & Trust

### Voice Guidance in Local Languages:

Users get easy-to-follow audio instructions in Hindi, Tamil, Bengali, and other languages, helping those who struggle with reading.

### Minimal Text, Clear Visuals:

Large buttons, simple icons, and progress indicators make it easy for users new to digital apps to navigate smoothly.

### Offline Save & Resume:

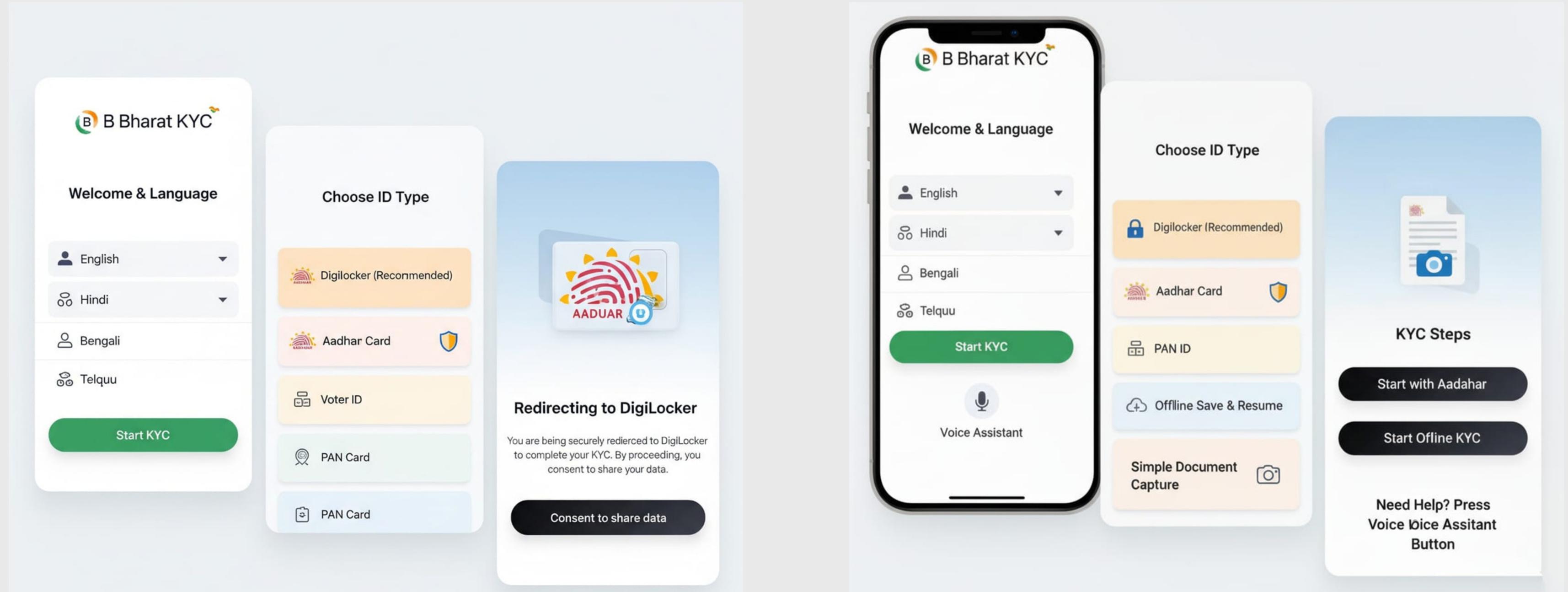
Users can pause their KYC process and pick it up later without losing any information, even with unreliable internet.

### Simple Document Capture:

Visual guides and instant feedback assist users in taking clear pictures of their documents, reducing the chances of rejection.

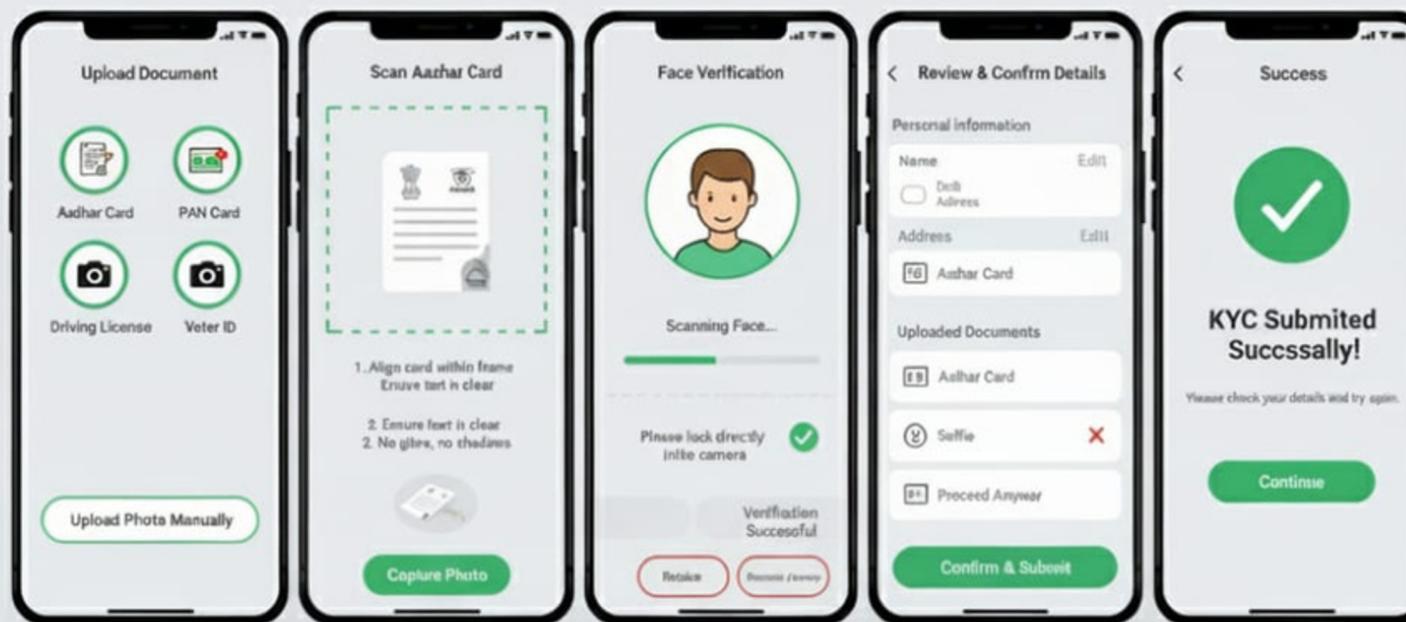
# UX Design For Bharat

## Designing for Low Literacy & Trust



# UX Design For Bharat

## Designing for Low Literacy & Trust



# Key Features + AI Enhancements

## Features That Build Trust & Simplicity

### Multiple KYC Methods:

Users can verify their identity using Digilocker, upload documents like Aadhaar, PAN, Driving License, Voter ID, or use face verification.

### AI Voice Assistant:

The app provides step-by-step guidance in the user's local language and answers simple questions during the KYC process.

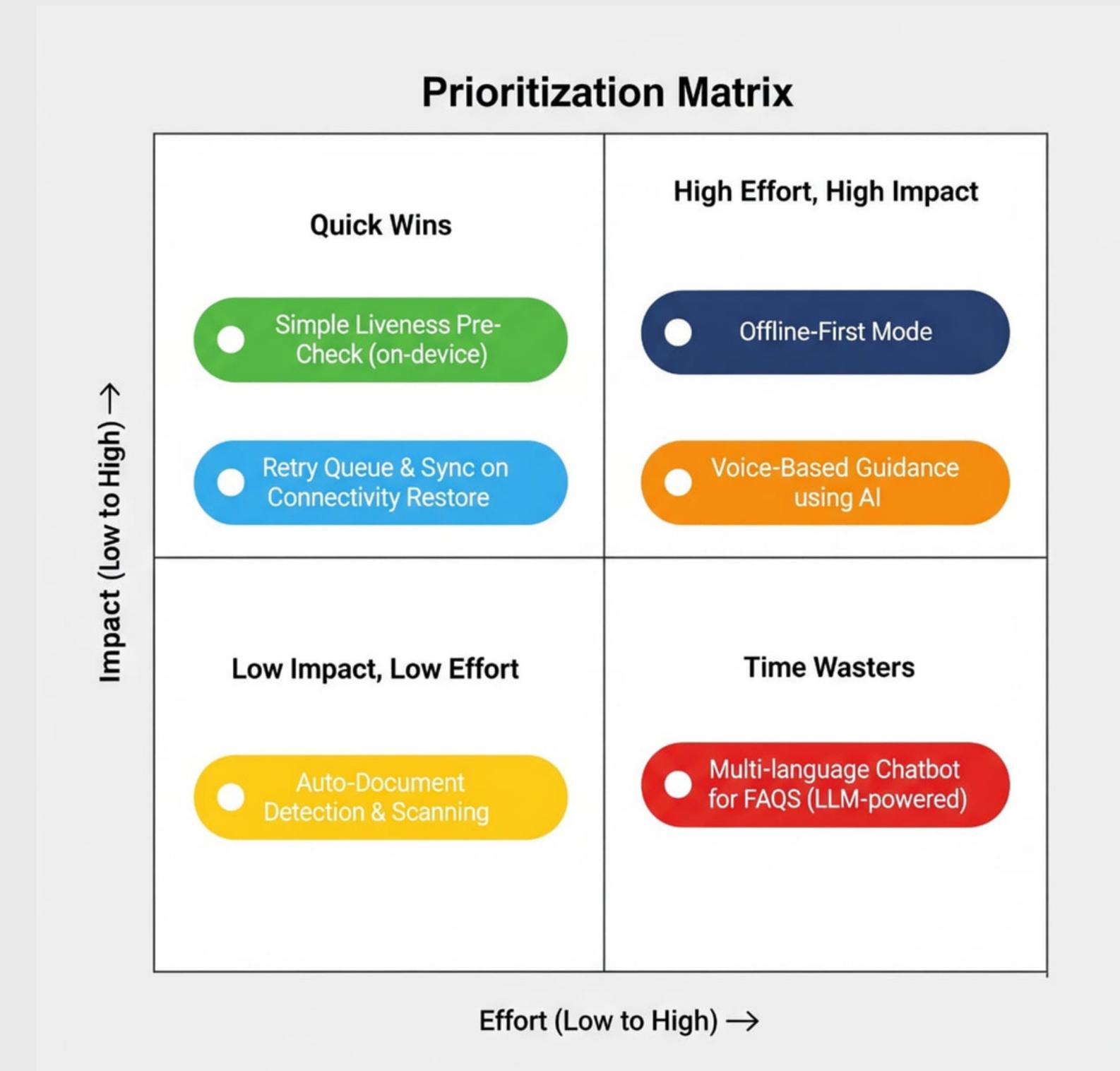
### Automatic Data Extraction:

Using AI, the app reads details from uploaded documents and fills in the forms automatically, reducing the need for typing.

### Offline Use & Auto Retry:

Users can save their progress and the app will automatically try again to upload information when internet connectivity returns.

# Feature Prioritisation Matrix



# Technical Architecture

## Modular SDK (<10 MB)

The core app is lightweight for fast downloads and smooth use on basic phones. Advanced features like face verification are optional add-ons, downloaded only when needed, keeping the main app small.

## On-Device Processing

Tasks such as capturing documents and face liveness checks happen directly on the user's phone. This reduces delays, keeps data private, and works even without internet.

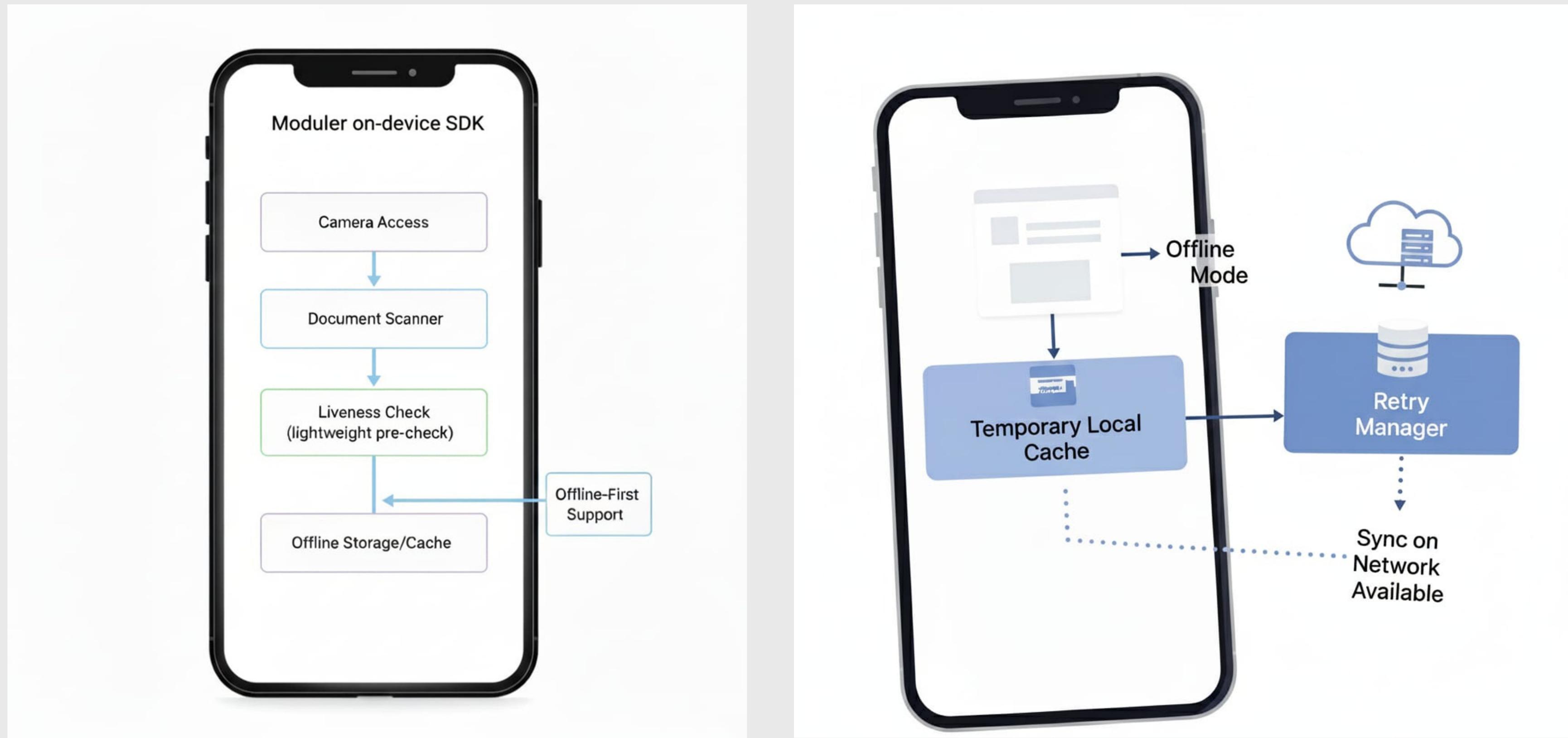
## Lightweight API Design

Data sent between the app and servers uses compressed JSON and images to minimize data use. Retry tokens help safely continue interrupted sessions without repeating steps.

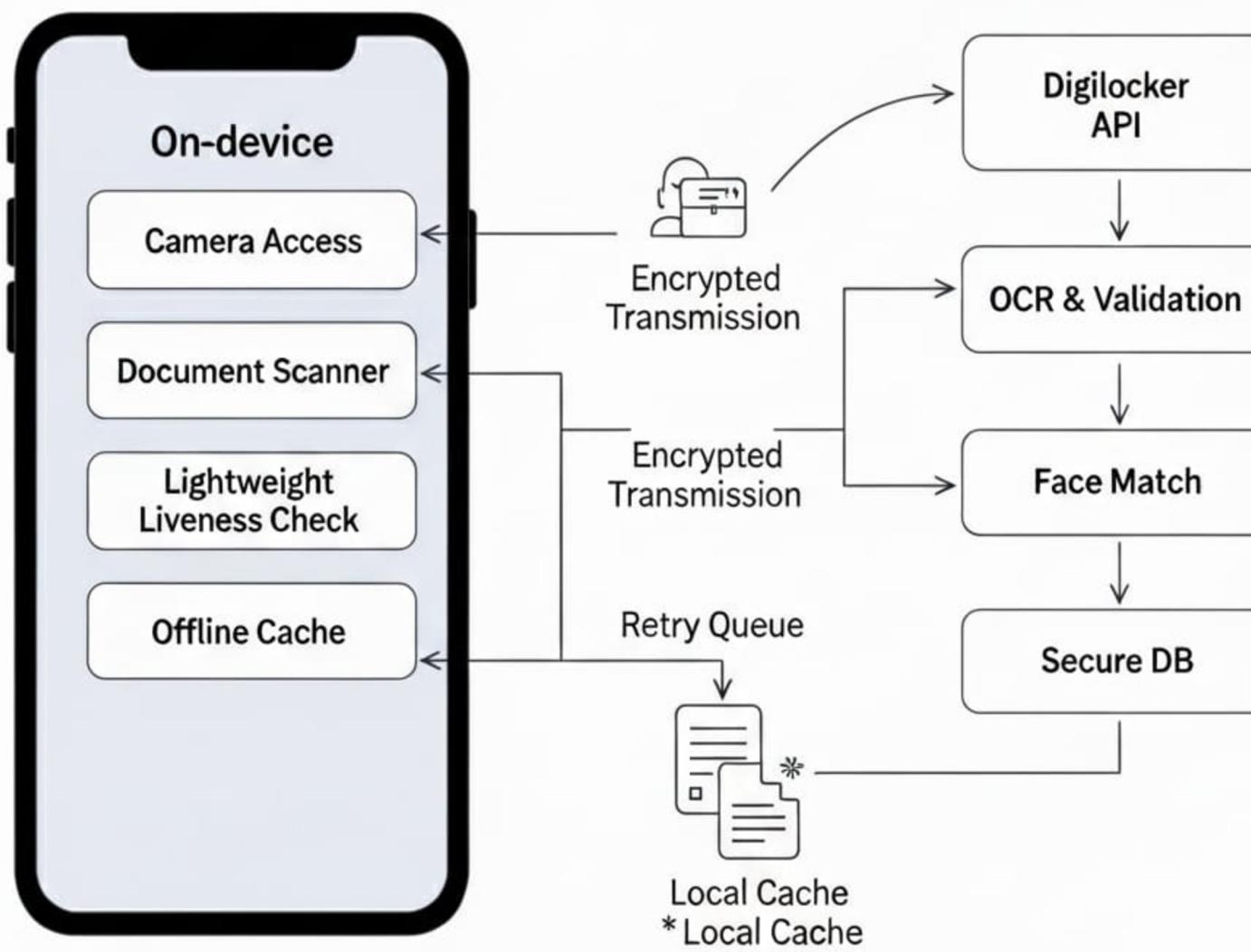
## Retry Manager

The app saves progress locally at every step. If the internet goes down, it automatically tries again to upload data once the connection returns—so users don't lose their work or have to start over.

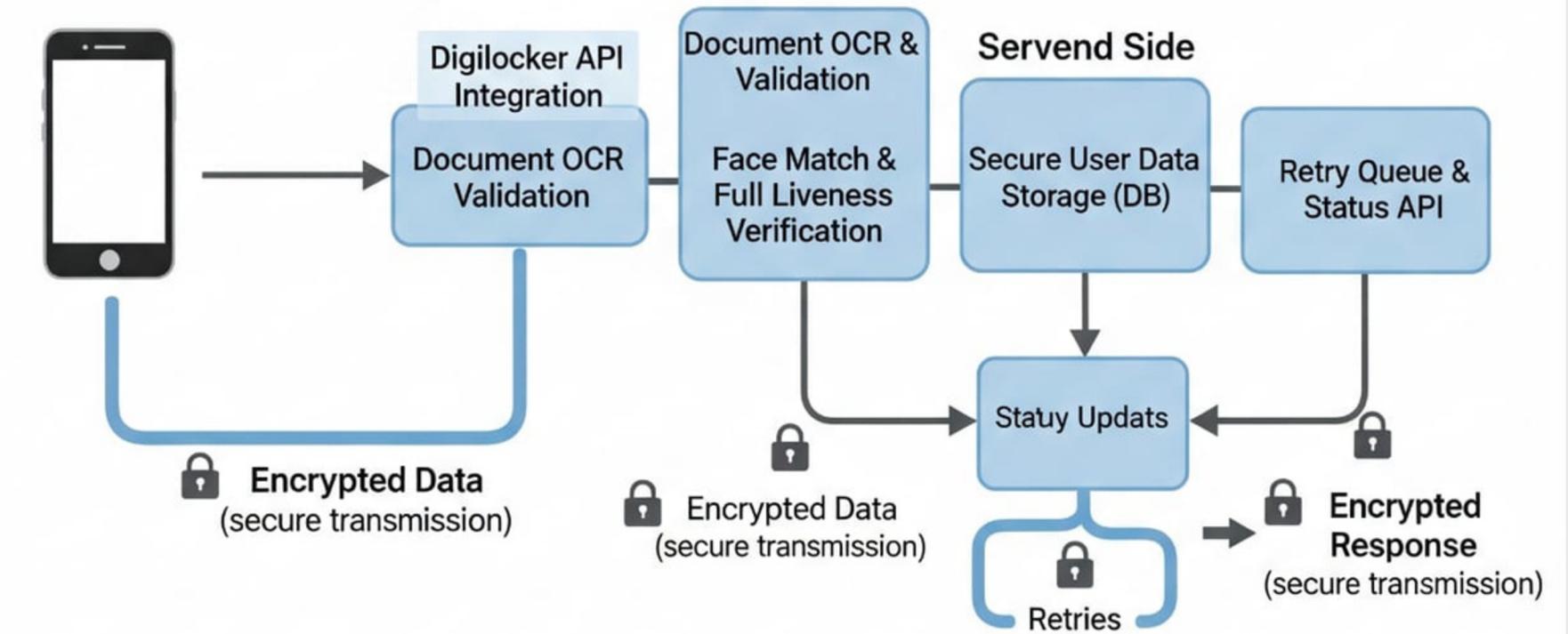
# Technical Architecture



# Technical Architecture



## Backend Server-Side



# Making KYC Resilient to Network Failures

## **Local Progress Saving:**

Every step in the KYC process is stored on the user's device, so no data is lost if the internet connection drops.

## **Automatic Retry Queue:**

If a task like uploading a photo or verification fails, it is added to a queue and retried automatically in the background once the network is back.

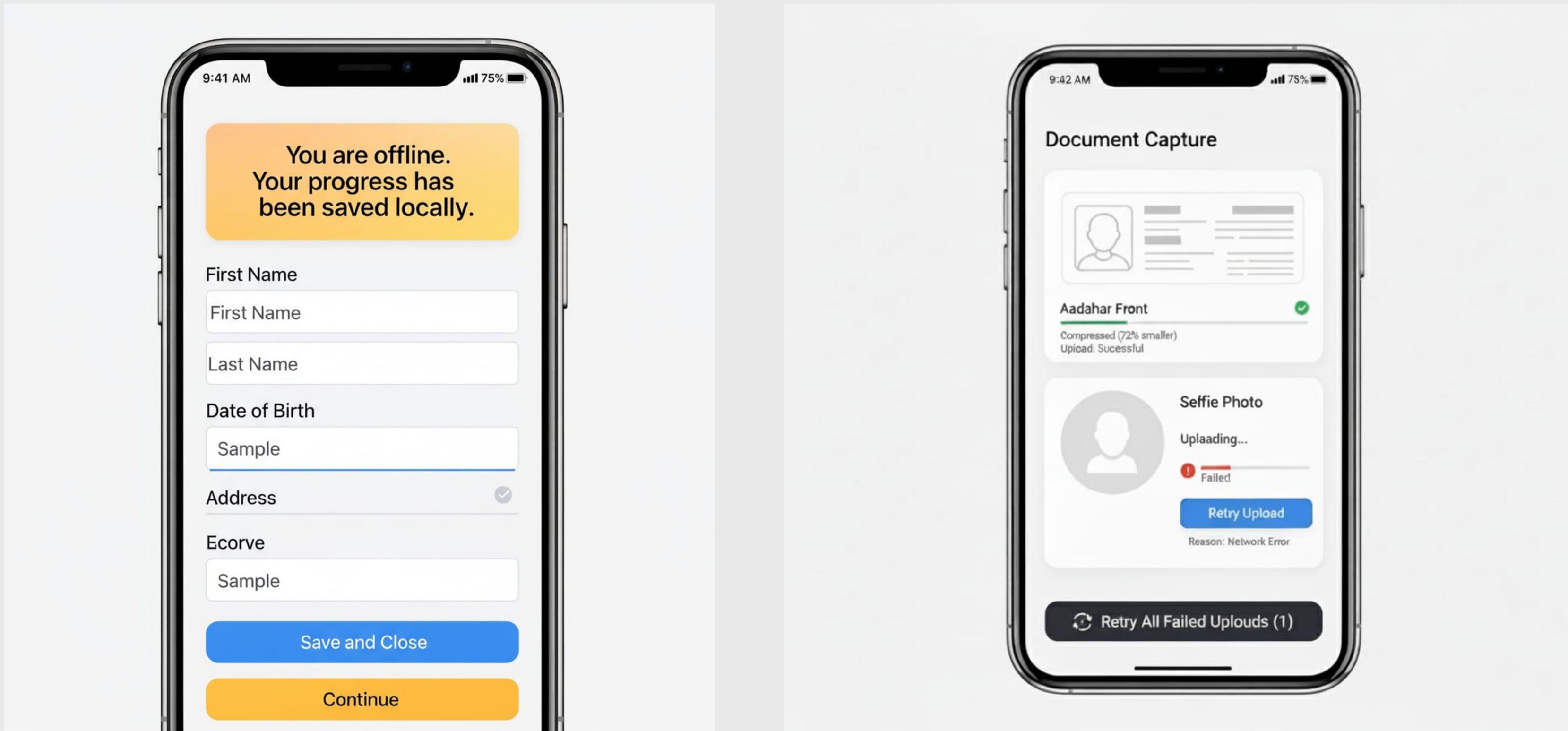
## **Image Compression and Retry:**

Photos and documents are compressed before being uploaded to save data and make retries faster

## **Smart Retry Strategy:**

Instead of retrying immediately and repeatedly, the app waits and retries at increasing intervals to save battery and avoid network overload.

# Making KYC Resilient to Network Failures



# **Key Metrics to Track Success**

We will focus on measuring how users experience the KYC process to make it better over time.

## **KYC Completion Rate:**

The share of users who finish the entire KYC successfully.

**Goal:** Higher completion means a smoother experience.

## **User Trust Score:**

How much users trust and feel confident using the app (measured through surveys or NPS).

**Goal:** Build trust, especially for new or less confident users.

## **Drop-off Rate at Each Step:**

Where users stop or quit during the process.

**Goal:** Identify problem points to improve the flow.

# Security & Compliance

## **End-to-End Encryption:**

All data is protected with AES-256 encryption and sent securely over HTTPS to keep it safe during transfer and storage.

## **Temporary Face Data Processing:**

Face images used for verification are processed instantly and are never saved on the device or servers.

## **Data Stored in India:**

User information is kept on servers within India, following RBI and UIDAI data localization rules.

## **Consent-Based Data Use:**

Users must give clear consent before any personal data is collected or uploaded, ensuring transparency and control.

# Summary & Road Ahead

## What We Built :

### **Designed for Bharat:**

A lightweight, offline-first, and secure KYC app tailored for rural and semi-urban users.

### **AI-Powered Assistance:**

Voice-guided help and smart support using AI to assist users with limited digital skills.

### **Modular SDK for Partners:**

An easy-to-integrate SDK with offline saving and automatic retry features.

## Next Steps:

### **Usability Testing in Tier 2/3 Towns:**

Test the app with real users to gather feedback on language, speed, and ease of use.

### **Expand Language Support & Improve AI:**

Add more regional languages and refine the AI assistant based on user feedback.

# CONCLUSION

This KYC app is built to help people in rural and semi-urban areas easily complete their digital verification. It works well even with slow internet and basic phones, making it simple and reliable. With features like voice guidance and offline use, it supports users who are new to smartphones. By testing and working with partners, we will keep improving the app to reach more people and make digital services easier for everyone.