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# Technical Structure V1.1

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App & Backend  
Development

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## 1. User Registration and Profile Management

- **User Account Setup:** Allow users to register with basic details, such as name, email, and phone number. Offer account creation with social logins for convenience.
- **Face Registration:** Guide users to set up a facial profile by capturing multiple angles and expressions for more accurate recognition.
- **Profile Management:** Enable users to update or delete their facial data and manage settings for privacy and usage.

## 2. Face Detection and Recognition Engine

- **High-Quality Detection Algorithm:** Use a reliable face detection and recognition algorithm (e.g., Amazon Rekognition, or a custom deep learning model) to ensure high accuracy.
- **Multi-Angle Recognition:** Allow the app to recognize faces from different angles, lighting conditions, and distances.
- **Real-Time Processing:** Support real-time face recognition through the device's camera, especially for applications requiring immediate identification (e.g., access control).

## 3. Face Authentication for Security

- **Face Login:** Allow users to use face recognition to log into their accounts, providing a secure, password-free experience.
- **Two-Factor Authentication (2FA):** Offer 2FA where face recognition is combined with another authentication method (such as a PIN) for added security.
- **Device-Based Authentication:** Provide authentication that works directly with the device's built-in security (e.g., Face ID on iPhones or Android face unlock).

## 4. Photo Recognition

- **Face Recognition in Photos:** Enable users to upload a photo and have the app recognize and tag people in it based on pre-registered faces.
- **Batch Processing:** For bulk photo uploads, enable batch processing to tag or identify faces across multiple images at once.

## 5. Advanced AI Features and Recognition Insights

- **Age and Gender Detection:** Include algorithms to estimate age and gender, which can be used to customize content or create user demographics.

## 6. Privacy and Data Security

- **Data Encryption:** Encrypt facial data both at rest and in transit to protect user privacy.
- **On-Device Processing:** Where possible, process facial data directly on the device to avoid storing sensitive data on servers, reducing data security risks.
- **Explicit Consent for Recognition:** Require user consent before scanning or storing facial data. Offer opt-in or opt-out options for recognition purposes.

## 7. Data Storage and Management

- **Secure Database Storage:** Store facial data and profiles in a secure, encrypted database, complying with relevant data protection laws (such as GDPR, CCPA).
- **Automatic Data Deletion:** Set policies for data retention, such as automatic deletion after a set period or after inactivity.
- **Audit Logs:** Maintain a log of face recognition activities (e.g., logins, scans, accesses) for user transparency and compliance.

## 8. Performance Optimization for Various Conditions

- **Low-Light Detection:** Optimize recognition for low-light conditions, using enhancements or infrared support if available.
- **High-Speed Recognition:** Ensure that recognition works quickly, especially important for real-time applications such as access control.

## 10. User Notifications and Alerts

- **Login Alerts:** Notify users if someone attempts to log in to their account using face recognition.
- **Recognition Success/Failure Notifications:** Alert users when their face is successfully recognized or if there is an error in recognition, helpful for troubleshooting.
- **Usage Reports:** Provide regular reports to users on their recognition activity, including location, device, and time details for security.

## 11. User-Friendly Interface and Feedback

- **Guided Face Registration:** Offer step-by-step guidance for users to register their face, improving recognition accuracy.
- **Error Feedback:** Provide feedback if the recognition fails, such as "too dark" or "move closer," helping users correct their positioning.
- **Recognition Confidence Score:** Show a confidence score for each recognition event, useful for applications where manual verification may be required.

## 12. Ethical and Compliance Considerations

- **Compliance with Local Laws:** Ensure that the app complies with laws and regulations around facial recognition, such as GDPR, CCPA, or biometric privacy laws.
- **Bias and Fairness:** Test the recognition model for fairness and minimize biases related to age, race, or gender.
- **Transparency and User Control:** Offer transparency on how facial data is used, stored, and protected. Allow users to view, download, or delete their data at any time.

### 13. Admin Dashboard for Monitoring and Management (For Enterprise Use)

- **User Management:** For multi-user systems, allow admins to add, update, or remove users and manage access permissions.
- **Recognition Analytics:** Track recognition accuracy, success rate, and other key performance metrics to improve the system.
- **Incident Logs and Reports:** Generate logs and reports of all face recognition events for security, compliance, and analysis.

#### Photographer Area:

##### Basic Information and Account Setup

- **Name and Contact Information:** Capture the photographer's full name, email, and phone number.
- **Username and Password:** Allow photographers to create a unique username and password, or use social sign-ins for quicker access.
- **Profile Picture:** Enable photographers to upload a profile picture to personalize their profile.

##### Portfolio and Sample Work Upload

- **Portfolio Upload:** Allow photographers to upload high-quality sample images to showcase their style and skills.
- **Category-Specific Albums:** Let photographers organize their work into specific categories, like weddings, portraits, landscapes, events, etc., to help clients see relevant samples.
- **Portfolio URL:** Provide an option to link to an external portfolio website or social media (e.g., Instagram, Behance).

##### Professional Information and Experience

- **Specializations:** Include a list of photography specializations (e.g., wedding, portrait, commercial, landscape, fashion, event) and let photographers select their primary focus areas.
- **Years of Experience:** Allow photographers to specify their experience level, helping clients gauge their proficiency.
- **Certifications and Education:** Include fields for any formal photography education, certifications, or awards.

##### Service Details and Pricing

- **Service Packages**
- **Pricing Tiers:**
- **Add Ons Services:** Enable them to list optional add-ons like photo albums, drone photography, extra editing, or rush delivery.

### Location and Travel Preferences

- **Base Location:** Require photographers to list their primary location or city, so clients can filter by location.
- **Travel Preferences:** Allow photographers to specify if they are willing to travel, and if so, any additional travel fees.
- **Serviceable Regions:** Enable photographers to define specific regions or cities where they're available, if they offer regional services.

### Availability and Calendar Management

- **Calendar Integration:** Let photographers connect to a calendar (e.g., Google Calendar) to manage and display their availability in real-time.
- **Booking Availability:** Allow photographers to set their working hours and mark certain dates as unavailable.
- **Real-Time Updates:** Enable photographers to update their availability directly from their profile, helping clients see the most accurate information.

### Payment and Transaction Information

- **Payment Information:** Enable photographers to link a preferred payment method for receiving payments (e.g., UPI, Credit Card,, bank transfer).
- **Payment Terms:** Allow photographers to specify their payment terms, such as deposit requirements, cancellation policies, and refund terms.
- **Earnings Dashboard:** Provide a dashboard where photographers can view earnings, upcoming payments, and completed transactions.

### Dashboard and Profile Analytics

- **Profile Views and Engagement Metrics:** Show photographers their profile's performance, such as the number of views, clicks, and contact inquiries.
- **Booking and Earnings Tracking:** Provide insights into bookings, completed jobs, and earnings, allowing photographers to monitor their business growth.
- **Client Demographics and Preferences:** Offer insights into the type of clients viewing their profile, helping photographers tailor their offerings.

## Admin Login Area

An admin dashboard for a photography or service-oriented app should offer tools to manage users, monitor transactions, handle bookings, analyze platform performance, and ensure security. Below are key features for an admin dashboard:

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### 1. User Management

- **User Profiles:** View, edit, and manage profiles for both photographers and clients, with quick access to contact info, history, and activity status.
- **Account Verification:** Manage the verification process for photographers by reviewing submitted documents, like IDs or certifications, and approving or denying requests.
- **Account Suspension and Reactivation:** Temporarily disable or reactivate accounts due to violations, inactivity, or other concerns.
- **User Feedback and Reports:** View complaints or reports filed by users about other users, ensuring timely investigation and resolution.

### 2. Content and Portfolio Moderation

- **Portfolio Review:** Monitor and approve uploaded portfolios to ensure compliance with guidelines (e.g., no inappropriate content).
- **Content Filtering:** Use automated or manual tools to detect and flag images or text that may violate content policies.
- **Review and Testimonials Moderation on photographer profile:** Monitor client reviews and testimonials to maintain platform integrity, with options to hide, edit, or remove inappropriate feedback.

### 3. Booking and Order Management

- **Booking Overview:** View all active, completed, and canceled bookings, along with relevant details like user names, dates, and services requested.
- **Calendar View:** Access a calendar view of all bookings to monitor overall platform activity and detect any scheduling conflicts.
- **Dispute Management:** Handle disputes between clients and photographers, with options to communicate directly, offer resolutions, or issue refunds if necessary.

### 4. Financial Management

- **Transaction Overview:** Track all transactions, including completed payments, pending transactions, and refunds, with detailed breakdowns.
- **Revenue and Fees:** Monitor the platform's revenue, including commission on bookings, any fees charged to users, and monthly revenue trends.
- **Payout Management:** Process and track payouts to photographers, including verifying linked payment methods and handling payout errors.

- **Refund Processing:** Manage refund requests with easy access to booking details and reasons for refund, allowing for approval or denial.

## 5. Analytics and Reporting

- **User Analytics:** Track key metrics, such as total users, active users, new registrations, and churn rate, to understand platform growth.
- **Booking Analytics:** Analyze booking trends, including peak times, popular categories, and average booking values.
- **Financial Analytics:** View revenue, total bookings, average transaction value, and trends over time.
- **Engagement Metrics:** Monitor metrics like profile views, booking requests, and conversion rates for photographers to measure engagement.
- **Customizable Reports:** Generate and export reports on user growth, financial performance, and other KPIs in formats like Excel, PDF, or CSV.

## 6. Notification and Communication Management

- **In-App Notifications:** Send important updates, reminders, or alerts to users, including maintenance updates, new features, or policy changes.
- **Email and SMS Management:** Control automated emails and SMS notifications sent for bookings, payments, and reminders. Customize templates and frequency.
- **Admin Broadcasts:** Send announcements or newsletters to the user base, promoting new features, events, or guidelines.

## 7. Service and Pricing Management

- **Service Categories:** Add, edit, or remove service categories to keep the platform's offerings current and relevant.
- **Pricing Rules:** Set or update platform fees, service charges, and any seasonal pricing rules that apply to specific services.
- **Discount Codes and Promotions:** Create and manage promotional offers, discount codes, or special deals to attract new users or reward loyal clients.

## 8. Complaint and Dispute Resolution Tools

- **Incident Tracking:** View and manage reports of issues, such as unprofessional conduct, booking disputes, or payment issues.
- **Resolution Workflows:** Use predefined workflows for handling common complaints, such as mediation between users, issuing refunds, or account actions.
- **User Communication:** Communicate directly with users involved in disputes, allowing admins to gather information and facilitate a fair resolution.