Kailash Yatra - Database Design

Design principles

- **Least privilege & roles:** participant, tour operator, support staff, admin via role assignments (yatra-scoped roles supported).
- **Auditability:** append-only audit_log and status fields on sensitive tables.
- **Offline friendly:** immutable IDs (UUID), narrow rows, predictable FKs, derived views for dashboards.
- **Extensible:** enums for statuses, JSONB for flexible payloads (kit contents, validation rules), separate files table for uploads.

Logical data model (high level)

- **Users & Roles:** users, roles, role_assignments (optionally scoped by yatra_id).
- **Yatra & Cohorts:** yatras, travel_groups.
- **Participants:** participants (per-yatra), participant_profile, emergency contact fields.
- **Payments:** payments with **milestones** (initial_deposit, forex_payment, extra_forex_cny) & attachments.
- **Documents:** document_types, participant_documents (status: not_submitted → uploaded_pending_review→ verified/ rejected_resubmit), files.
- **Tour profile:** flights (onward/return), yatra_kits (bag no., issued date, contents JSONB).
- **Itinerary & Alerts:** itinerary_days, itinerary_items (activities with editable times and notify offsets), notifications, push_tokens.
- **Stays & Rooms:** hotels, stays (per leg/location), room_assignments (roommates = same room & stay).
- **Observability:** audit_log, plus convenience views v_participant_status, v_group_progress for dashboards.

ERD Diagram

Entity Relationship Diagram

YATRAS
UUID	id	PK
TEXT	name	
TEXT	season	
DATE	start_date	
DATE	end_date	
INT	year	
TEXT	operator_org	
TEXT	status	
INT	capacity	

STAYS
UUID	id	PK
UUID	yatra_id	FK
UUID	travel_group_id	FK
travel_leg_enum	leg	
UUID	hotel_id	FK
DATE	checkin_date	
DATE	checkout_date	
TEXT	special_requirements	

TRAVEL_GROUPS
UUID	id	PK
UUID	yatra_id	FK
TEXT	code	
TEXT	name	
permit_stage_enum	permit_stage	
visa_stage_enum	visa_stage	

HOTELS
UUID	id	PK
TEXT	name	
TEXT	address	
TEXT	city	
TEXT	country	
DOUBLE	latitude	
DOUBLE	longitude	
TEXT	phone	

ROOM_ASSIGNMENTS
UUID	id	PK
UUID	stay_id	FK
TEXT	room_no	
UUID	participant_id	FK
TIMESTAMPTZ	assigned_at	

USERS
UUID	id	PK
TEXT	full_name	
TEXT	phone	
TEXT	email	
TEXT	language_pref	
DATE	date_of_birth	

ROLES
TEXT	code	PK
TEXT	name	
JSONB	capabilities	

ITINERARY_DAYS
UUID	id	PK
UUID	yatra_id	FK
UUID	travel_group_id	FK
INT	day_number	
DATE	day_date	

PUSH_TOKENS
UUID	id	PK
UUID	user_id	FK
TEXT	device_id	
TEXT	token	
TEXT	platform	
TIMESTAMPTZ	created_at	

AUDIT_LOG
UUID	id	PK
UUID	actor_user_id	FK
TEXT	action	
TEXT	entity_table	
UUID	entity_id	
TIMESTAMPTZ	changed_at	
JSONB	diff	

ROLE_ASSIGNMENTS
UUID	user_id	FK
TEXT	role_code	FK
UUID	yatra_id	FK

PARTICIPANTS
UUID	id	PK
UUID	yatra_id	FK
UUID	user_id	FK
UUID	travel_group_id	FK
DATE	registration_date	

ITINERARY_ITEMS
UUID	id	PK
UUID	itinerary_day_id	FK
itinerary_activity_type_enum	activity_type	
TEXT	title	
TEXT	description	
TIME	start_time	
TEXT	timezone	
BOOLEAN	notify_enabled	
INT	notify_offset_minutes	

YATRA_KITS
UUID	id	PK
UUID	participant_id	FK
TEXT	bag_no	
DATE	issued_on	
JSONB	contents	

DOCUMENT_TYPES
document_type_enum	code	PK
TEXT	display_name	
INT	max_size_mb	
TEXT[]	allowed_mime	
JSONB	validation_rules	

FLIGHTS
UUID	id	PK
UUID	participant_id	FK
flight_leg_enum	leg	
TEXT	flight_number	
DATE	flight_date	
TIME	flight_time	
TEXT	pnr	

PARTICIPANT_PROFILE
UUID	participant_id	PK,FK
TEXT	nationality	
TEXT	passport_no	
TEXT	blood_group	
TEXT	medical_notes	
TEXT	language_pref	
TEXT	emergency_contact_name	
TEXT	emergency_contact_phone	
TEXT	emergency_contact_relation	

FILES
UUID	id	PK
TEXT	storage_uri	
TEXT	file_name	
TEXT	content_type	
BIGINT	size_bytes	
TEXT	checksum	
BOOLEAN	encrypted	

PAYMENTS
UUID	id	PK
UUID	participant_id	FK
payment_milestone_enum	milestone	
NUMERIC	amount	
CHAR(3)	currency	
DATE	paid_on	
TEXT	receipt_no	
TEXT	confirmation_ref	
TEXT	purpose	
payment_status_enum	status	

NOTIFICATIONS
UUID	id	PK
UUID	participant_id	FK
UUID	travel_group_id	FK
notification_channel_enum	channel	
TIMESTAMPTZ	scheduled_at	
TIMESTAMPTZ	sent_at	
TEXT	status	
TEXT	error	

PARTICIPANT_DOCUMENTS
UUID	id	PK
UUID	participant_id	FK
document_type_enum	doc_type	
UUID	file_id	FK
document_status_enum	status	
TIMESTAMPTZ	uploaded_at	
UUID	verified_by	FK
TIMESTAMPTZ	verified_at	
TEXT	rejection_reason	

PAYMENT_ATTACHMENTS
UUID	payment_id	FK
UUID	file_id	FK