

Kitravia Database Schema

Overview

Kitravia is an AI-powered travel planning platform. This document provides complete specifications for the PostgreSQL database schema supporting trip planning, bookings, payments, and AI-assisted itinerary generation.

Table of Contents

1. Architecture Overview
2. Core Tables
 - Users
 - Trips
3. Booking Tables
 - Flights
 - Hotels
 - Rentals
 - Activities
 - Bookings
4. Financial Tables
 - Payments
5. Feature Tables
 - eBooks
 - AI Conversations
 - Notifications
 - Visa Requirements
 - Flight Status Updates
6. Data Types Reference
7. Entity Relationships

1. Architecture Overview

- User-centric design: All data ties back to user accounts
 - Trip-based organization: Bookings and activities are organized by trips
 - Cascade deletions: Removing a trip or user automatically cleans up related records
 - Audit trails: All tables include created_at and updated_at timestamps
 - Financial tracking: Separate payment records with Stripe integration
 - AI integration: Stores conversation history and generated itineraries
-

2. Core Tables

Users

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique user identifier
email	VARCHAR(255)	UNIQUE, NOT NULL	Login email address
password_hash	VARCHAR(255)	NOT NULL	Bcrypt hashed password
first_name	VARCHAR(100)	-	User's first name
last_name	VARCHAR(100)	-	User's last name
phone	VARCHAR(20)	-	Contact phone number
profile_picture_url	VARCHAR(500)	-	URL to profile image
location	VARCHAR(255)	-	User's home location
loyalty_points	INTEGER	DEFAULT 0	Accumulated rewards points
preferences	JSONB	-	User preferences (JSON format)
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Account creation date
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update timestamp

Trips

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique trip identifier
user_id	INTEGER	FOREIGN KEY → users.id, NOT NULL	Trip owner
title	VARCHAR(255)	NOT NULL	Trip name/title
destination	VARCHAR(255)	NOT NULL	Primary destination city
start_date	DATE	NOT NULL	Trip start date
end_date	DATE	NOT NULL	Trip end date
party_size	INTEGER	NOT NULL	Number of travelers
budget	DECIMAL(12,2)	-	Total budget in USD
activities	TEXT[]	-	Array of activity types
ai_chat_history	JSONB	-	AI conversation messages
itinerary_draft	JSONB	-	AI-generated itinerary
itinerary_final	JSONB	-	User-confirmed itinerary

Column	Type	Constraints	Description
status	VARCHAR(50)	DEFAULT 'planning'	Trip status
total_cost	DECIMAL(12,2)	-	Actual total spending
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Creation date
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

Hotels

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique hotel booking ID
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip
name	VARCHAR(255)	NOT NULL	Hotel name
city	VARCHAR(100)	NOT NULL	Hotel location
check_in_date	DATE	NOT NULL	Check-in date
check_out_date	DATE	NOT NULL	Check-out date
room_type	VARCHAR(100)	-	Type of room booked
guests	INTEGER	-	Number of guests
price	DECIMAL(10,2)	NOT NULL	Hotel price
currency	VARCHAR(3)	DEFAULT 'USD'	Currency code
booking_status	VARCHAR(50)	DEFAULT 'pending'	Booking status
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

Rentals

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique rental booking ID
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip

Column	Type	Constraints	Description
type	VARCHAR(50)	NOT NULL	Rental type (car, bike, etc.)
company	VARCHAR(100)	-	Rental company name
pick_up_date	DATE	NOT NULL	Pickup date
drop_off_date	DATE	NOT NULL	Drop-off date
pick_up_location	VARCHAR(255)	-	Pickup location
drop_off_location	VARCHAR(255)	-	Drop-off location
price	DECIMAL(10,2)	NOT NULL	Rental price
currency	VARCHAR(3)	DEFAULT 'USD'	Currency code
booking_status	VARCHAR(50)	DEFAULT 'pending'	Booking status
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

Activities

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique activity ID
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip
name	VARCHAR(255)	NOT NULL	Activity name
category	VARCHAR(100)	-	Type/category of activity
location	VARCHAR(255)	-	Activity location
date	DATE	-	Activity date
time	TIME	-	Activity start time
duration	INTEGER	-	Duration in minutes
price	DECIMAL(10,2)	-	Cost if applicable
currency	VARCHAR(3)	DEFAULT 'USD'	Currency code
booking_status	VARCHAR(50)	DEFAULT 'pending'	Booking status
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

Bookings

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique booking ID
user_id	INTEGER	FOREIGN KEY → users.id	Booking owner
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip
booking_type	VARCHAR(50)	NOT NULL	Type (flight, hotel, rental, activity)
booking_reference	VARCHAR(100)	-	Reference/confirmation code
status	VARCHAR(50)	DEFAULT 'pending'	Booking status
price	DECIMAL(10,2)	-	Booking cost
currency	VARCHAR(3)	DEFAULT 'USD'	Currency code
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

3. Booking Tables

Flights

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique flight booking ID
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip
departure_city	VARCHAR(100)	NOT NULL	Departure city
arrival_city	VARCHAR(100)	NOT NULL	Arrival city
departure_date	DATE	NOT NULL	Flight departure date
departure_time	TIME	-	Departure time
arrival_date	DATE	-	Flight arrival date
arrival_time	TIME	-	Arrival time
airline	VARCHAR(100)	-	Airline name
flight_number	VARCHAR(20)	-	Flight number (e.g., UA123)
aircraft_type	VARCHAR(100)	-	Aircraft model
duration	INTEGER	-	Flight duration in minutes

Column	Type	Constraints	Description
stops	INTEGER	DEFAULT 0	Number of stops
price	DECIMAL(10,2)	NOT NULL	Flight price
currency	VARCHAR(3)	DEFAULT 'USD'	ISO currency code
seat_class	VARCHAR(50)	-	Cabin class
booking_reference	VARCHAR(100)	-	Airline confirmation code
booking_status	VARCHAR(50)	DEFAULT 'pending'	Booking status
payment_status	VARCHAR(50)	DEFAULT 'unpaid'	Payment status
confirmation_email_sent	BOOLEAN	DEFAULT FALSE	Email notification flag
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

4. Financial Tables

Payments

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique payment ID
user_id	INTEGER	FOREIGN KEY → users.id, NOT NULL	Paying user
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip
booking_id	INTEGER	FOREIGN KEY → bookings.id	Associated booking
amount	DECIMAL(12,2)	NOT NULL	Payment amount
currency	VARCHAR(3)	DEFAULT 'USD'	ISO currency code
payment_method	VARCHAR(50)	-	Payment method type
stripe_transaction_id	VARCHAR(255)	UNIQUE	Stripe transaction ID
stripe_payment_intent	VARCHAR(255)	-	Stripe PaymentIntent ID
status	VARCHAR(50)	DEFAULT 'pending'	Payment status

Column	Type	Constraints	Description
failure_reason	TEXT	-	Failure description
paid_at	TIMESTAMP	-	Payment completion time
refunded_at	TIMESTAMP	-	Refund timestamp
refund_amount	DECIMAL(12,2)	-	Refunded amount
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

5. Feature Tables

eBooks

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique eBook ID
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip
title	VARCHAR(255)	NOT NULL	eBook title
url	VARCHAR(500)	NOT NULL	Download link
format	VARCHAR(50)	-	File format (PDF, EPUB)
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

AI Conversations

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique conversation ID
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip
user_id	INTEGER	FOREIGN KEY → users.id	User involved
message	TEXT	NOT NULL	Conversation message
sender	VARCHAR(50)	NOT NULL	'user' or 'AI'
timestamp	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Message timestamp

Notifications

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique notification ID
user_id	INTEGER	FOREIGN KEY → users.id	Notification recipient
type	VARCHAR(50)	-	Type of notification
message	TEXT	NOT NULL	Notification text
read_status	BOOLEAN	DEFAULT FALSE	Whether user has read it
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

Visa Requirements

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique visa requirement ID
trip_id	INTEGER	FOREIGN KEY → trips.id	Associated trip
country	VARCHAR(100)	NOT NULL	Destination country
required	BOOLEAN	DEFAULT FALSE	Whether visa is required
type	VARCHAR(50)	-	Type of visa
duration	INTEGER	-	Maximum stay in days
notes	TEXT	-	Additional info
created_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Record creation
updated_at	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Last update

Flight Status Updates

Column	Type	Constraints	Description
id	SERIAL	PRIMARY KEY	Unique status update ID
flight_id	INTEGER	FOREIGN KEY → flights.id	Associated flight
status	VARCHAR(50)	NOT NULL	Flight status (on-time, delayed, canceled)
update_time	TIMESTAMP	DEFAULT CURRENT_TIMESTAMP	Timestamp of status update
location	VARCHAR(255)	-	Location of update

6. Data Types Reference

PostgreSQL Type	Use Case	Example
SERIAL	Auto-incrementing integer primary keys	id SERIAL PRIMARY KEY
VARCHAR(n)	Variable-length text up to n characters	email VARCHAR(255)
TEXT	Unlimited length text	description TEXT
INTEGER	Whole numbers	party_size INTEGER
DECIMAL(p,s)	Precise decimal numbers	price DECIMAL(10,2)
DATE	Date only (YYYY-MM-DD)	start_date DATE
TIME	Time only	departure_time TIME
TIMESTAMP	Date and time	created_at TIMESTAMP
BOOLEAN	True/false values	visa_required BOOLEAN
JSONB	Binary JSON data	preferences JSONB
TEXT[]	Array of text values	amenities TEXT[]

7. Entity Relationships

- USERS (1) → (many) TRIPS
- TRIPS (1) → (many) FLIGHTS, HOTELS, RENTALS, ACTIVITIES
- TRIPS (1) → (1) EBOOKS
- TRIPS (1) → (many) AI_CONVERSATIONS, VISA_REQUIREMENTS
- USERS (1) → (many) BOOKINGS
- BOOKINGS (1) → (many) PAYMENTS
- FLIGHTS (1) → (many) FLIGHT_STATUS_UPDATES
- USERS (1) → (many) NOTIFICATIONS, PAYMENTS

Cascade Behavior

- ON DELETE CASCADE: Deleting a user removes trips, bookings, payments, etc.
 - ON DELETE SET NULL: Deleting a booking nullifies booking_id in payments
-