Ingeniería de software 2

Workshop No. 2 - Design Artifacts and System Modeling

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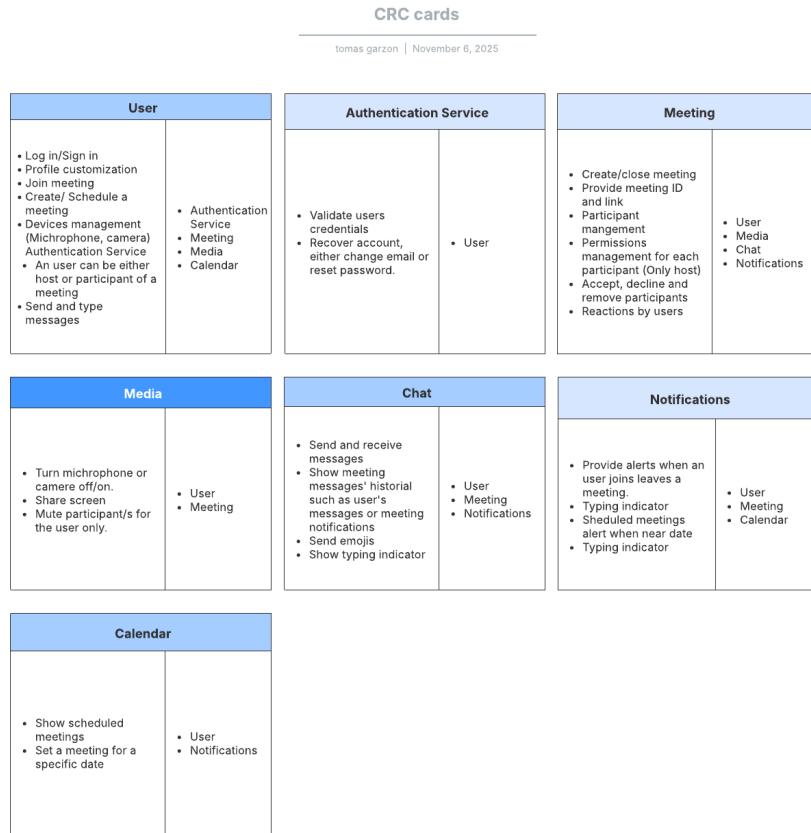
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• **CRC Cards:** Define the main classes, their responsibilities, and collaborators using CRC cards.

User	
• Log in/Sign in • Profile customization • Join meeting • Create/ Schedule a meeting • Devices management (Michrophone, camera) Authentication Service • An user can be either host or participant of a meeting • Send and type messages	• Authentication Service • Meeting • Media • Calendar

Authentication Service	
• Validate users credentials • Recover account, either change email or reset password.	• User

Meeting	
• Create/close meeting • Provide meeting ID and link • Participant mangement • Permissions management for each participant (Only host) • Accept, decline and remove participants • Reactions by users	• User • Media • Chat • Notifications

Media	
• Turn michrophone or camere off/on. • Share screen • Mute participant/s for the user only.	• User • Meeting

Chat	
• Send and receive messages • Show meeting messages' historial such as user's messages or meeting notifications • Send emojis • Show typing indicator	• User • Meeting • Notifications

Notifications	
• Provide alerts when an user joins leaves a meeting. • Typing indicator • Sheduled meetings alert when near date • Typing indicator	• User • Meeting • Calendar

Calendar	
• Show scheduled meetings • Set a meeting for a specific date	• User • Notifications

CRC cards: Lucidchart

• **Mockups:** Create mockups or wireframes for the main screens of your application.

1. Login / Sign Up

Authentication screen with email and password fields, social login options, toggle between sign in and sign up modes.
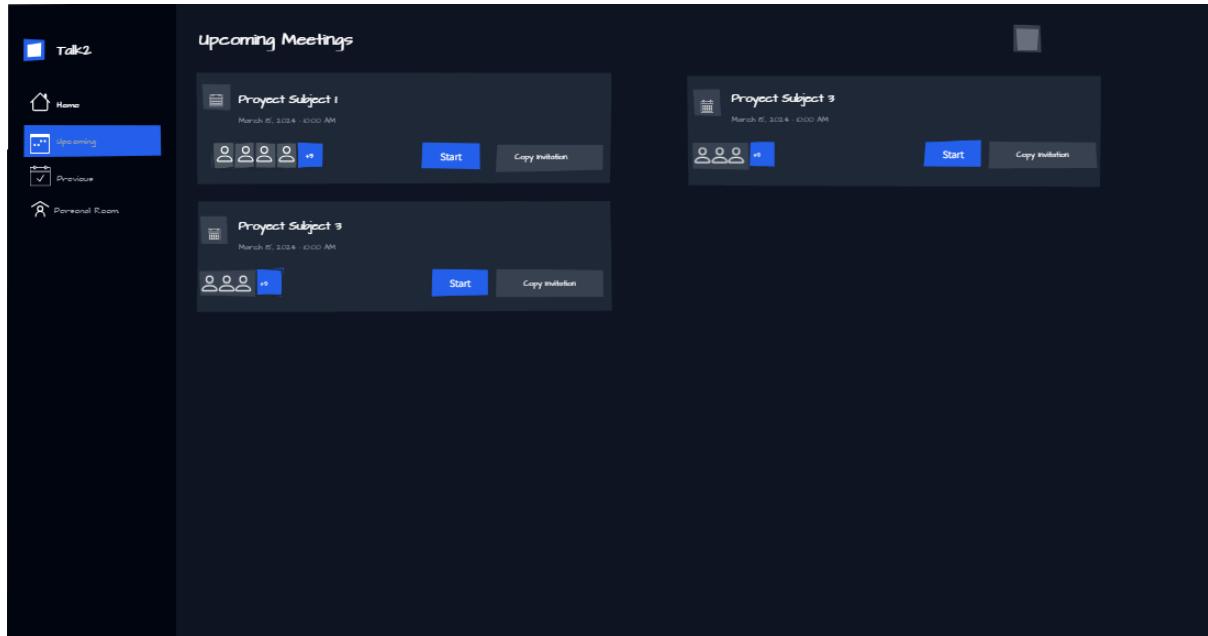
2. Home Screen

Main dashboard featuring quick action cards (Start New Meeting, Join Meeting, Schedule Meeting), welcome message, and navigation to other sections


3. Upcoming Meetings

List of scheduled future meetings displaying meeting title, date/time, participant count, copy link button, and "Start Meeting" action for each entry
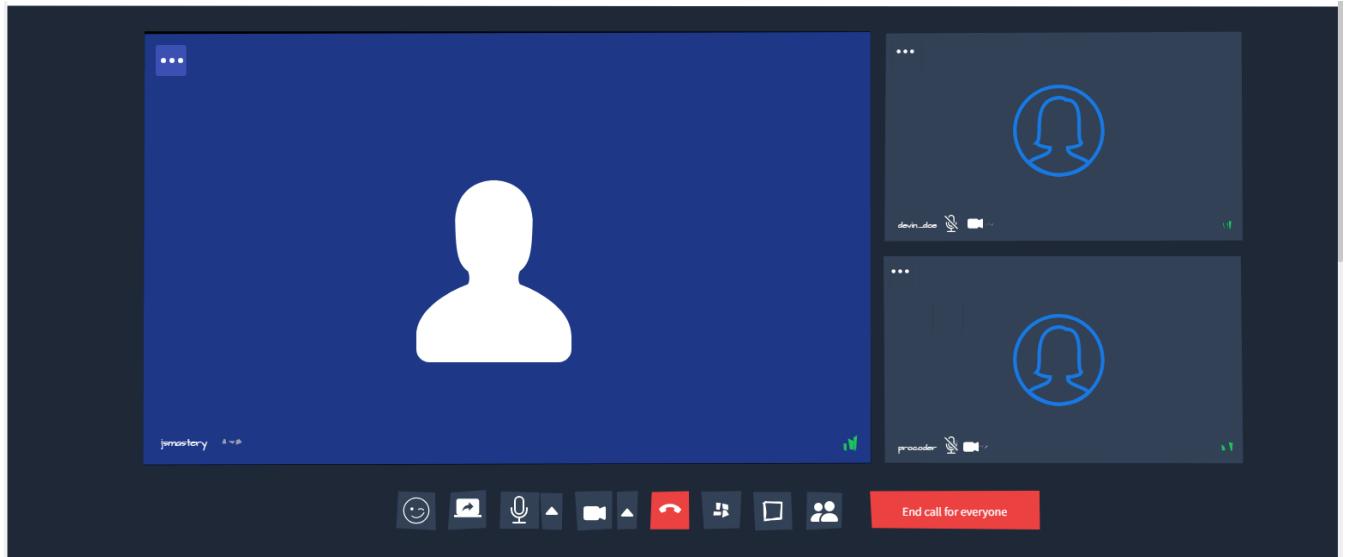

4. Previous Meetings

Historical view of past meetings showing meeting title, date held, duration, participant list, and options to view recording or delete meeting
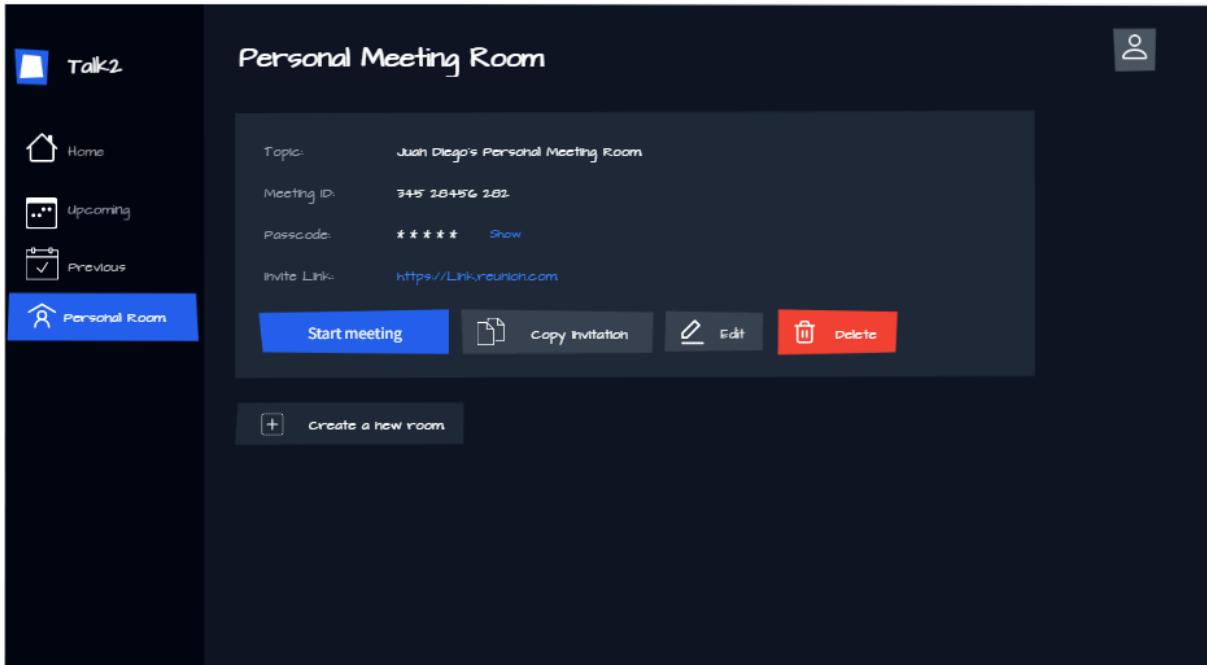

5. Meeting Room

Active video call interface with participant video grid layout, bottom control bar (microphone, camera, screen share, participants list, chat, leave call), meeting timer, and settings menu
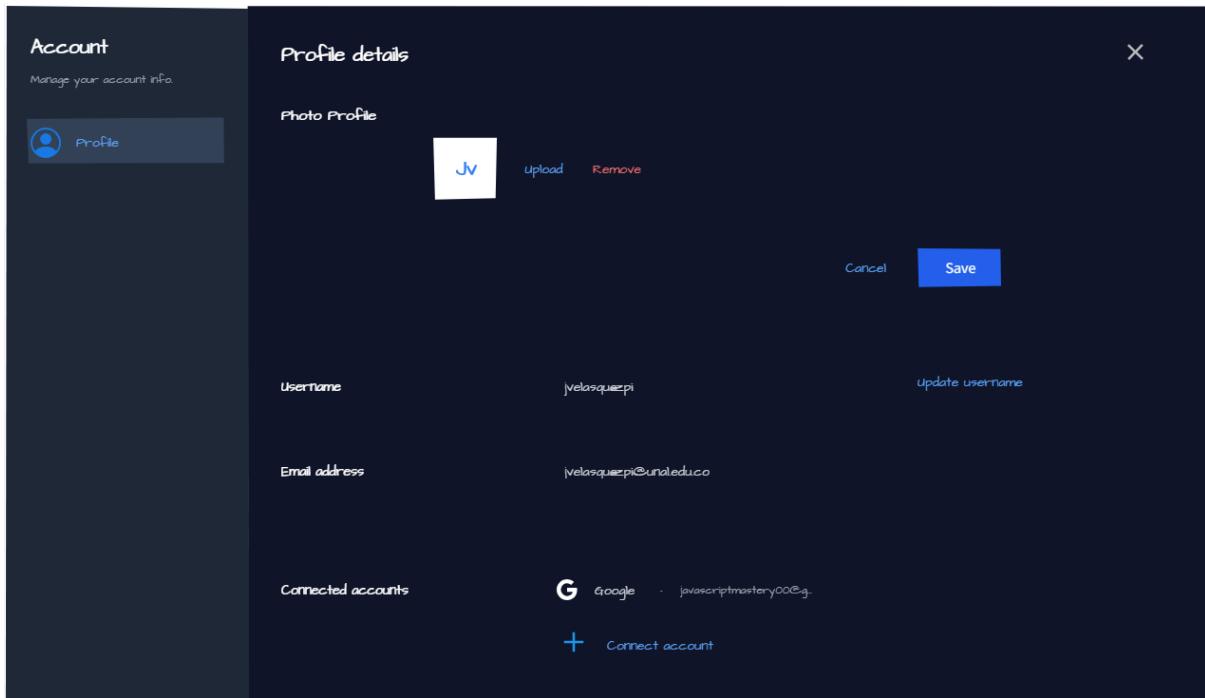
6. Personal Meeting Room

Dedicated permanent meeting space with unique meeting link, QR code for quick access, room settings, and instant "Start Meeting" button
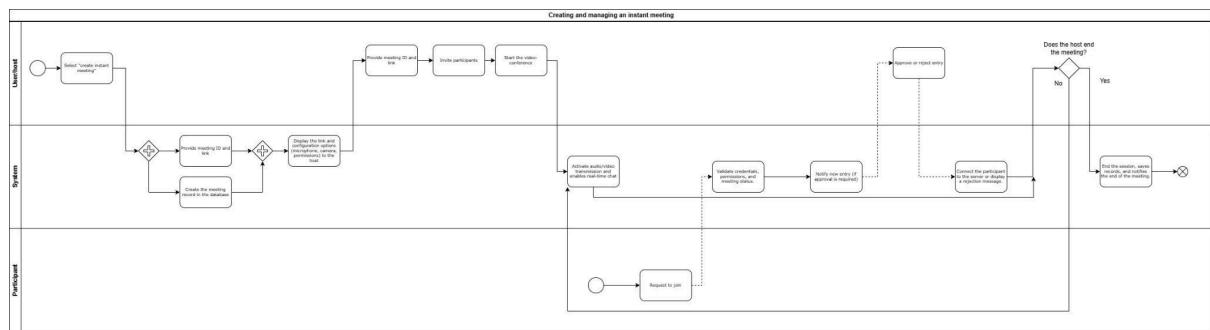
7. Manage Account

User profile management page with personal information fields, profile picture upload, email preferences, notification settings, and account security options
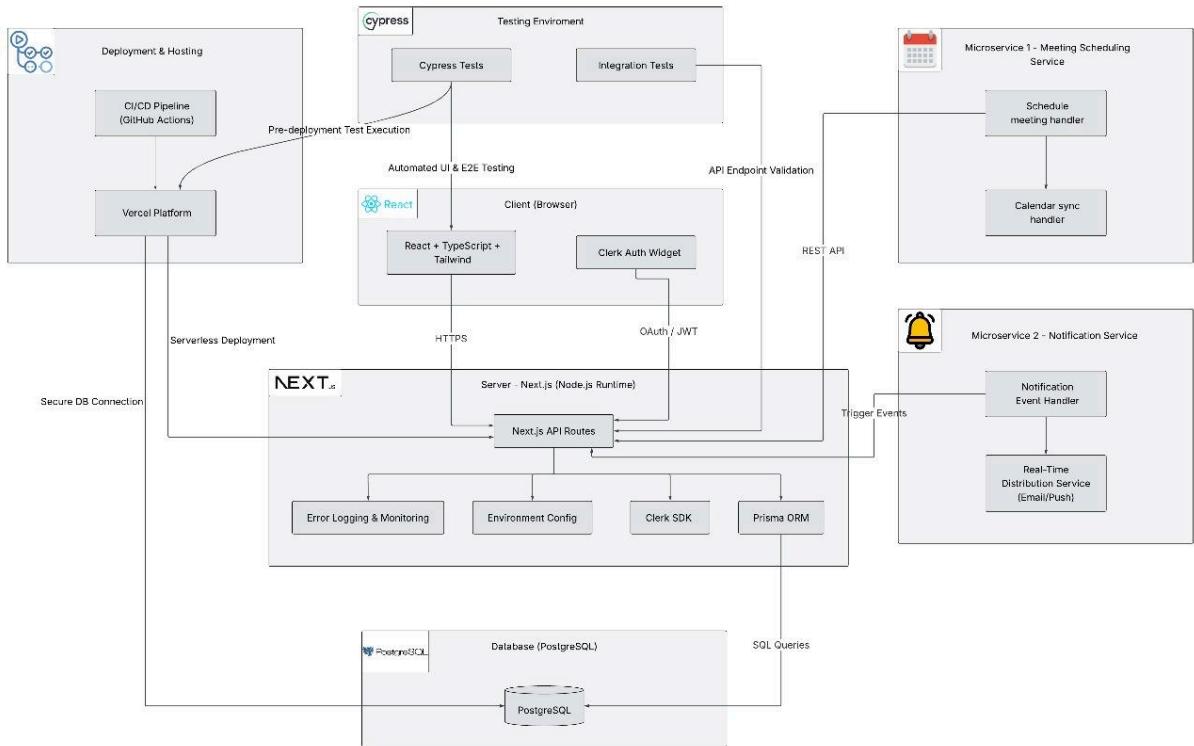
All mockups were designed using MockFlow, a collaborative wireframing platform for creating interface prototypes and design specifications.

• **Business Model Processes:** Document essential business processes using activity diagrams or BPMN.
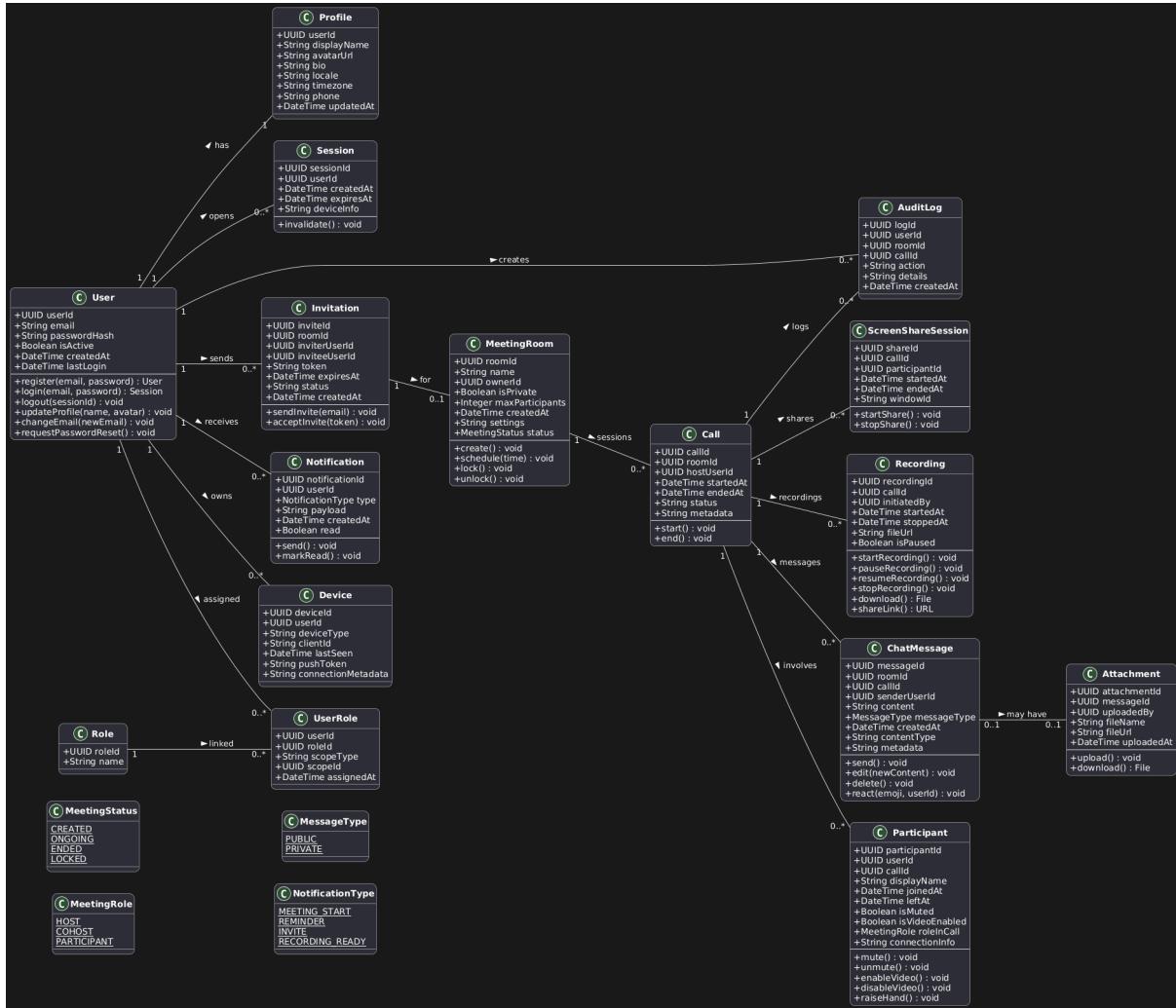
• **Architecture Diagram:** Draw the overall software architecture, showing main components and their interactions.

- **Class Diagram:** Create UML class diagrams for your system, including attributes, methods, and relationships.

• **Relational Database Model:** Design the relational database schema, including tables, keys, and relationships.

users

id 🔑	bigint
email	varchar(320)
password_hash	varchar(255)
is_active	boolean
created_at	timestamp
last_login_at	timestamp

profiles

user_id 🔑 🔗	bigint
display_name	varchar(100)
avatar_url	text
bio	text
locale	varchar(10)
timezone	varchar(50)
phone	varchar(30)
updated_at	timestamp

roles

id 🔑	smallint
name	varchar(50)

user_roles 🗔

user_id 🔑 🔗	bigint
role_id 🔑 🔗	smallint
scope_type 🔑	varchar(50)
scope_id 🔑	bigint
assigned_at	timestamp

rooms

id 🔑	bigint
owner_id 🔗	bigint
name	varchar(200)
slug	varchar(100)
is_private	boolean
max_participants	int
created_at	timestamp
settings	text

calls

id 🔑	bigint
room_id 🔗	bigint
host_user_id 🔗	bigint
started_at	timestamp
ended_at	timestamp
status	varchar(20)
metadata	text

call_participants 🗔

id 🔑	bigint
call_id 🔗	bigint
user_id 🔗	bigint
display_name	varchar(100)
joined_at	timestamp
left_at	timestamp
is_muted	boolean
is_video_enabled	boolean
role_in_call	varchar(30)
connection_info	text

messages

id 🔑	bigint
room_id 🔗	bigint
call_id 🔗	bigint
sender_user_id 🔗	bigint
content	text
content_type	varchar(20)
created_at	timestamp
metadata	text

audit_logs

id 🔑	bigint
user_id 🔗	bigint
room_id 🔗	bigint
call_id 🔗	bigint
action	varchar(100)
details	text
created_at	timestamp

devices

id 🔑	bigint
user_id 🔗	bigint
device_type	varchar(50)
client_id	varchar(255)
last_seen	timestamp
push_token	text
connection_metadata	text

invitations

id 🔑	bigint
room_id 🔗	bigint
inviter_user_id 🔗	bigint
invitee_user_id 🔗	bigint
token	varchar(128)
expires_at	timestamp
status	varchar(20)
created_at	timestamp
metadata	text

https://dbdiagram.io/d/6907a2396735e11170dce006