# Phase 4: Real-Time Messaging Core — Claude-Ready Task Cards

## Task 4.1 — Add Socket.IO Hello Test

Context for Claude:  
I have a project called Mivton — a multilingual chat platform — in a folder called Mivton on my Desktop. It’s a Node.js + Express.js backend, PostgreSQL DB, vanilla HTML/CSS/JS frontend, deployed to Railway. You must only edit files inside the Mivton folder. I will deploy using Railway CLI, so your changes must run locally with npm start and on Railway without extra setup.  
  
What to do:  
1. Install and set up Socket.IO on the server in server.js.  
2. Serve the Socket.IO client script to the frontend.  
3. In public/js/chat.js (create it if missing), connect to the server via Socket.IO.  
4. On connect (server), log socket connected and the socket ID.  
5. Create a simple round-trip: client emits a "ping" event, server responds with "pong".  
6. Do not add authentication yet — just basic connection.  
  
Testing (after you finish):  
1. Run npm start.  
2. Open dashboard.html in two browser tabs.  
3. In one tab’s browser console, run:  
 socket.emit('ping', { t: Date.now() })  
4. You should see a "pong" event in the console.  
5. Deploy to Railway with railway up and repeat the test on the live URL.

## Task 4.2 — Room per User (Temporary Stub IDs)

Context for Claude:  
Same as Task 4.1 above (Mivton, Node/Express, PostgreSQL, vanilla JS, deployable on Railway). You are adding to the code from the previous step.  
  
What to do:  
1. In the browser, store a temporary userId in localStorage (generate if missing).  
2. When the client connects to Socket.IO, emit a "join" event with this userId.  
3. On the server, socket.join("user:"+userId).  
4. Add a notify event so the server can send io.to("user:"+targetUserId).emit("notify", payload).  
  
Testing:  
1. In Tab A console:  
 localStorage.setItem('userId','alice'); location.reload();  
2. In Tab B console:  
 localStorage.setItem('userId','bob'); location.reload();  
3. In Tab A console:  
 socket.emit('server:notify',{ to:'user:bob', msg:'hi bob' })  
4. Tab B console should log { msg:'hi bob' }.

## Task 4.3 — Messages Table in PostgreSQL

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.4 — Send Direct Text Messages

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.5 — Typing Indicators

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.6 — Delivery Confirmations

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.7 — Read Receipts

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.8 — Search in Conversation

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.9 — Cleanup Job (90-day Retention)

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.10 — Input Sanitization & Rate Limit

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.11 — Switch to Real User Sessions

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

## Task 4.12 — Chat UI Polish

Context for Claude:  
Same project context.  
  
What to do:  
[Describe implementation details here.]  
  
Testing:  
[Describe testing steps here.]

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