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LiveDocs: A Peer-to-Peer Real-Time Collaborative Document Editor Using WebRTC and CRDTs

Team Members:

Charankumar E G D [921321205029]

Arunprasad S [921321205015]

Dharani Dharan R [921321205032]

Mentor:

Mrs. A. Sangeetha, M.E., Ph.D.,
Assistant Professor - Information Technology

Proposed Methodology

Use Next.js for the frontend with a custom collaborative editor.

Apply Yjs (CRDTs) for real-time updates and conflict resolution.

Leverage WebRTC for direct peer-to-peer communication and low latency.

Implement JWT authentication for secure access control.

Store documents in PostgreSQL for reliable backups and fast access.

Enable collaboration features like presence and roles.

Optimize WebRTC and CRDTs for low latency, scalability, and efficient sync.

Tools & Frameworks



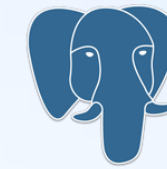
Next.js



TypeScript



Tailwind CSS



PostgreSQL



Prisma



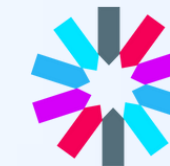
WebRTC



WebSocket



CRDTs (Yjs)



JWT



Git

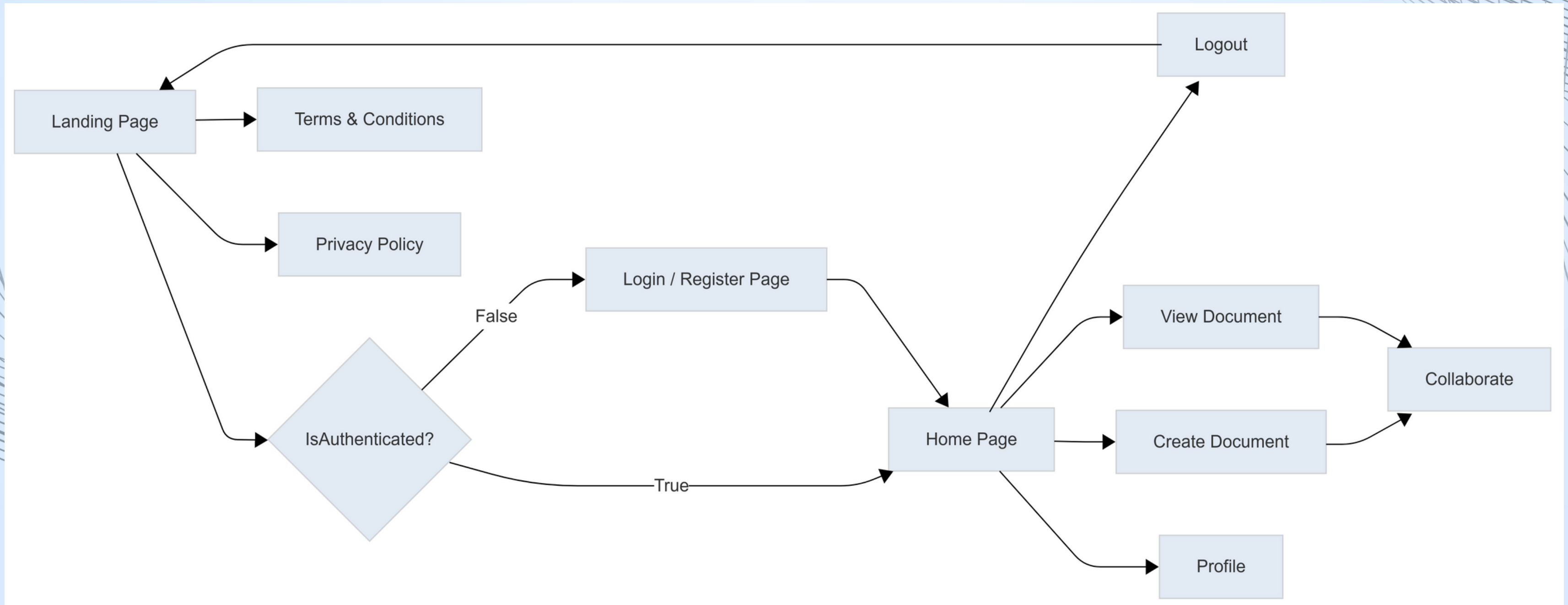


GitHub

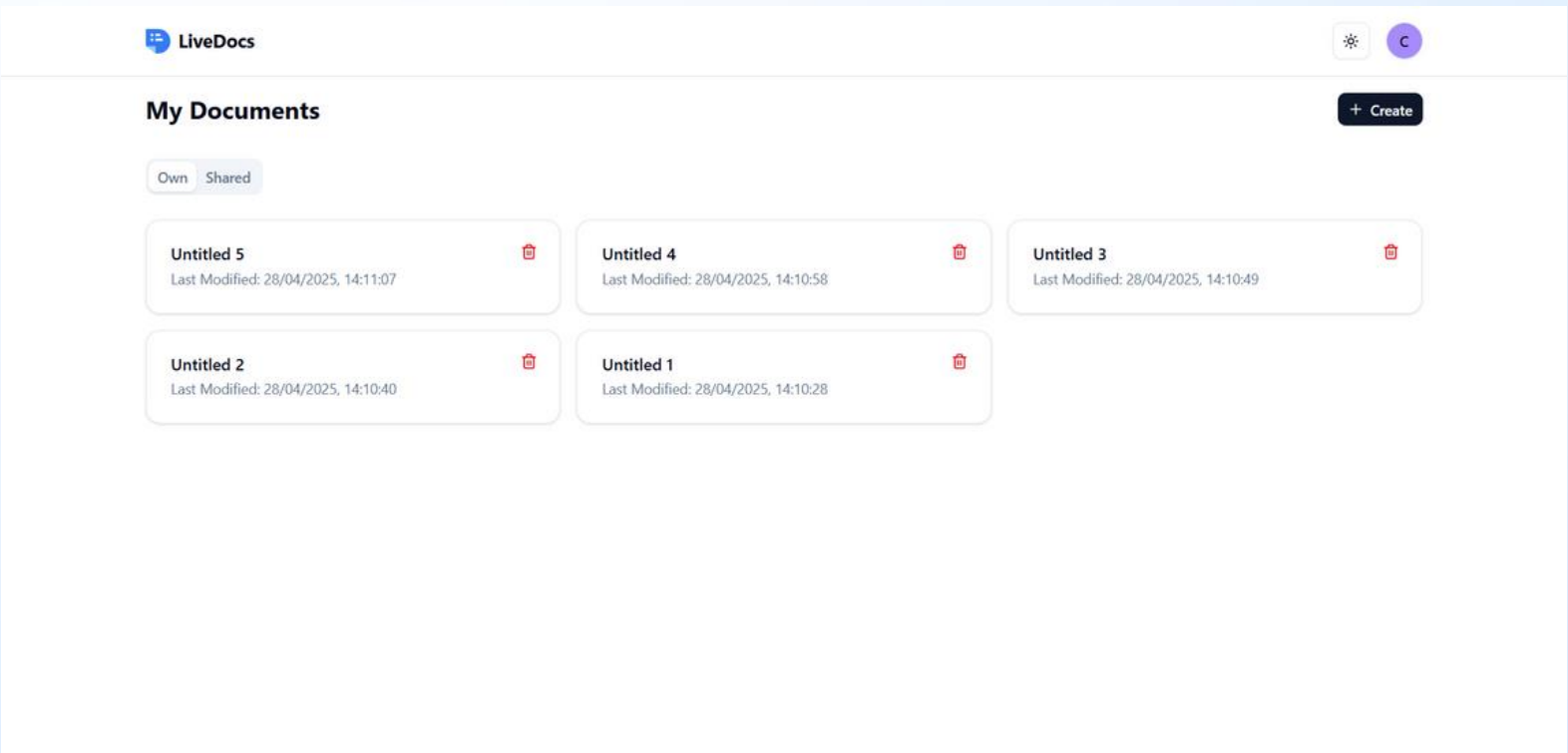
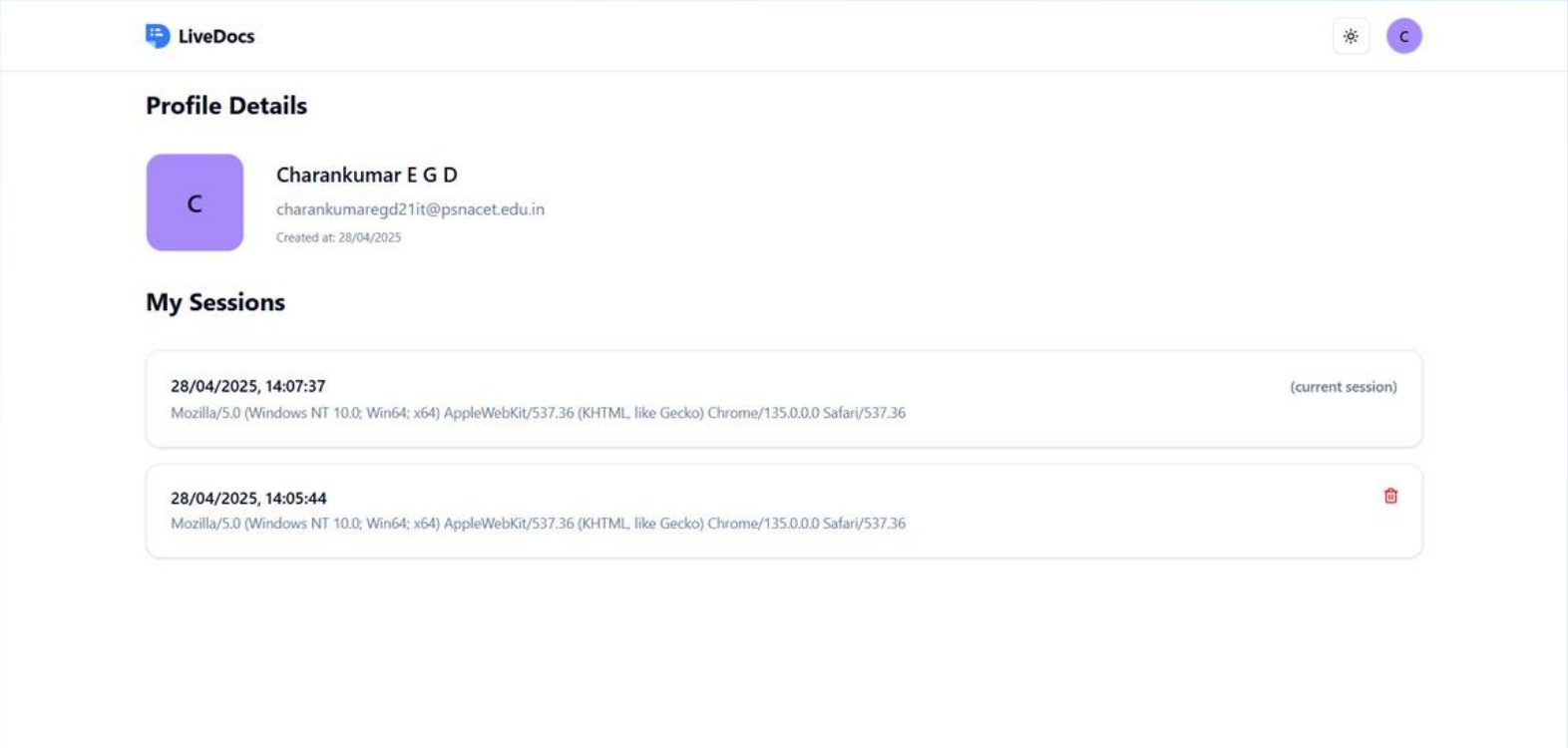


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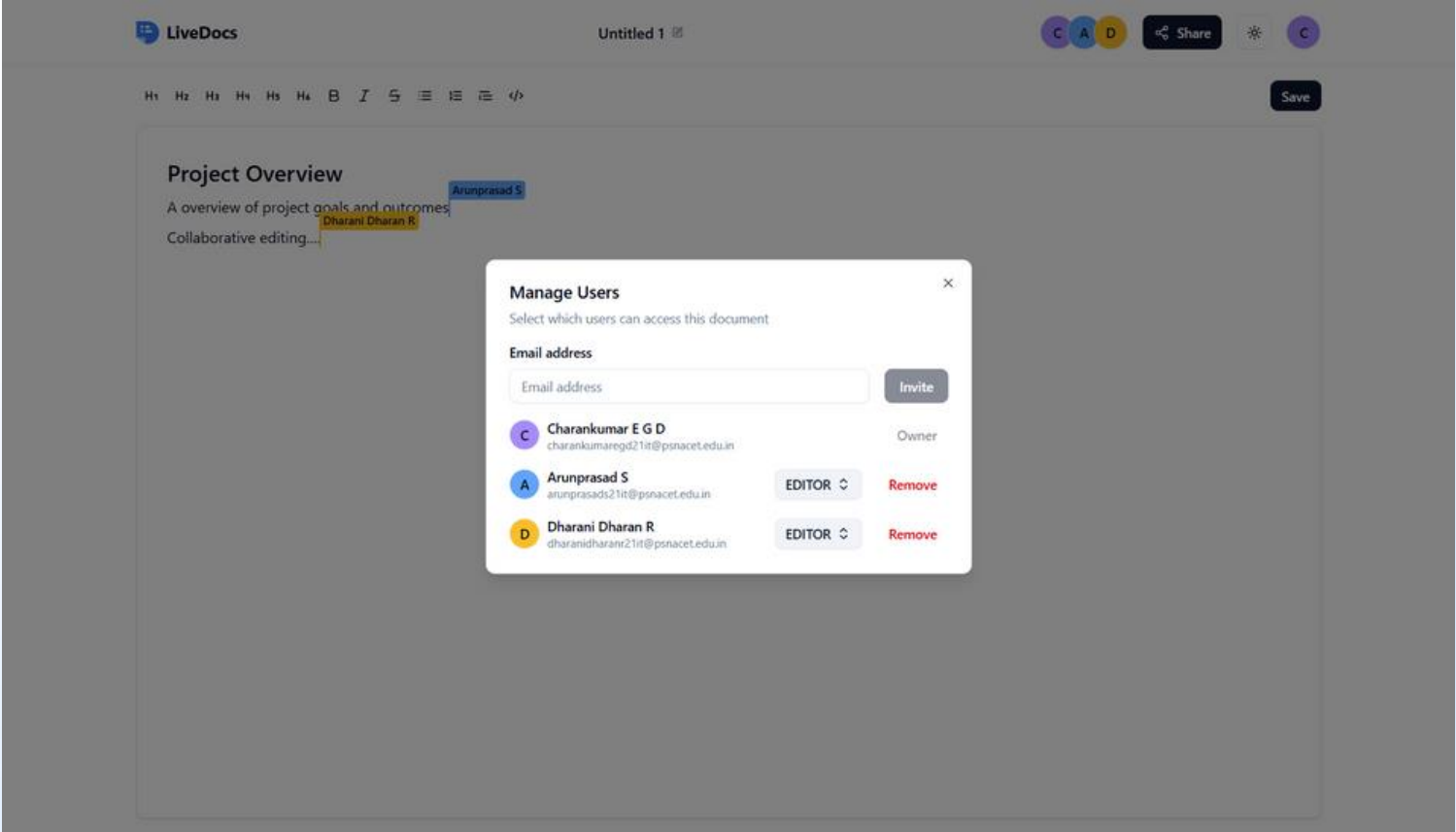
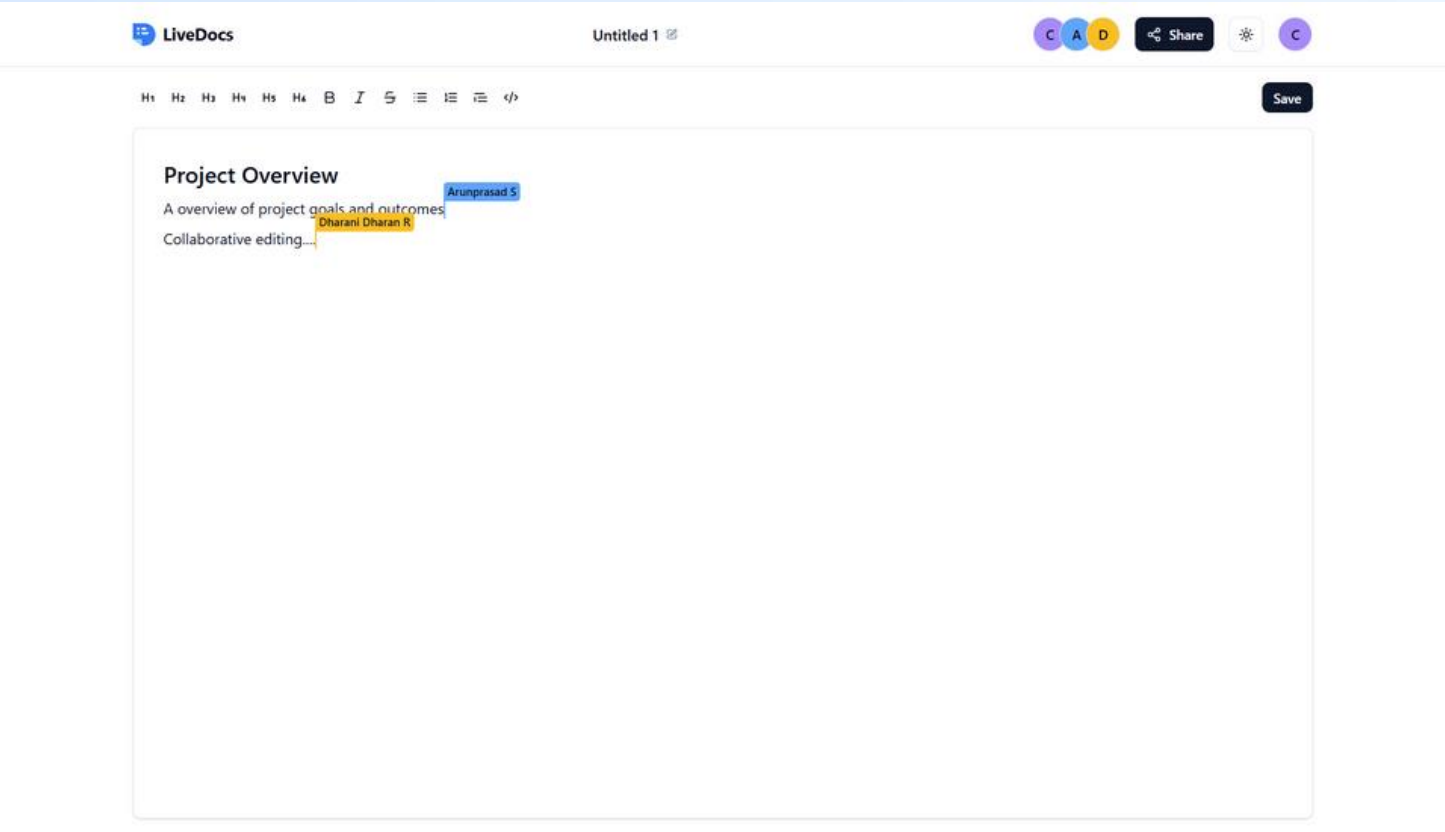
Flow Chart



Prototype



Prototype



The background features a light blue gradient with abstract, flowing, wavy lines in a slightly darker shade of blue, creating a sense of movement and depth. These lines are concentrated on the left and right sides, framing the central text.

Thank you