ABC

MEDLINK

AI-Powered • Decentralized Health Record System

Member Details :

Suniti Paliwal (Leader)

Shivam Yadav

Vishnu Pad

Zohadur Rahman Jafri

College :

ABES Engineering College Ghaziabad, Uttar Pradesh

Problem Statement

1. Current Storage Methods

- Most people rely on physical paper documents or phone galleries.
- Documents can be lost or hard to locate during emergencies.

2. Access During Emergencies

- Lack of immediate access to vital health history such as past treatments, allergies, and medications.
- This often results in delays to urgent treatment.

3.Medical reports are hard to understand

- Doctors' reports are full of medical terms.
- A normal person often can't understand them properly.

4. Need for a Centralized System

- There is no secure, centralized repository for complete medical histories.
- Such a system would be easily shareable but maintain privacy and security.

5. Risks of Incomplete Information

- In emergencies where patients are unconscious, doctors often lack critical information on past illnesses and medications
- This elevates the risk of complications.

Real-Life Example

Imagine an accident leaves you unconscious and doctors are unaware of your allergies. Immediate access to your medical history could save your life.

Proposed Solution

- **Store All Medical Records Securely on Blockchain**

  Your medical reports, prescriptions, and history are stored permanently and safely.

- **AI + OCR Automatically Understands Your Reports**

  Just upload your document – system reads, extracts, and explains key info using AI-powered OCR.

- **You Control Who Sees Your Data**

  Share your unique health address (like a wallet) with doctors – only they can access your history with permission.

- **Instant Access to Records – Anytime, Anywhere**

  Your health data is always available, even in emergencies, with zero paper required.

- **Medical Jargon? Not a Problem!**

  AI translates complex reports into simple language anyone can understand.

- **One Tap to Share Full Medical History**

  Visiting a new doctor? Share your address, and they see your entire treatment timeline instantly.

Features / Implementation of Solution

- **All Your Health Records, One Secure Vault – Forever :** Save your reports, prescriptions, allergies, and treatment history securely on the blockchain.

- **Just Upload – AI & OCR Do the Rest :** Upload a PDF or image, and OCR extracts text while AI explains medical terms in simple language.

- **Instant Emergency Access for Doctors :** Share your Health ID during emergencies – doctors get instant access to your history (with your permission).

- **One-Tap Sharing via Your Health Address :** Share your unique health address with any doctor to give them secure, permissioned access to your records.

- **Go 100% Paperless :** No more carrying files or losing reports – your full medical history is digitally available anytime.

- **Visual Health Timeline :** Get a clear view of your medical journey – when you were sick, what treatment worked, and how you recovered.

- **Tamper-Proof & Transparent :** Powered by blockchain – once uploaded, your data can't be altered or deleted.

- **You Own Your Data – Privacy Comes First :** Only you decide who sees your health information. Full control and transparency at your fingertips.

Tech Stack

Frontend (User Interface):

React.js / Next.js – for building the web app

Tailwind CSS – for styling

Backend:

Node.js + Express – for API development

MongoDB / IPFS – for storing encrypted metadata/files

Blockchain:

Ethereum – for smart contracts & secure transactions

Smart Contracts (Solidity) – for access control and verification

AI + OCR:

Tesseract.js – for extracting text from reports
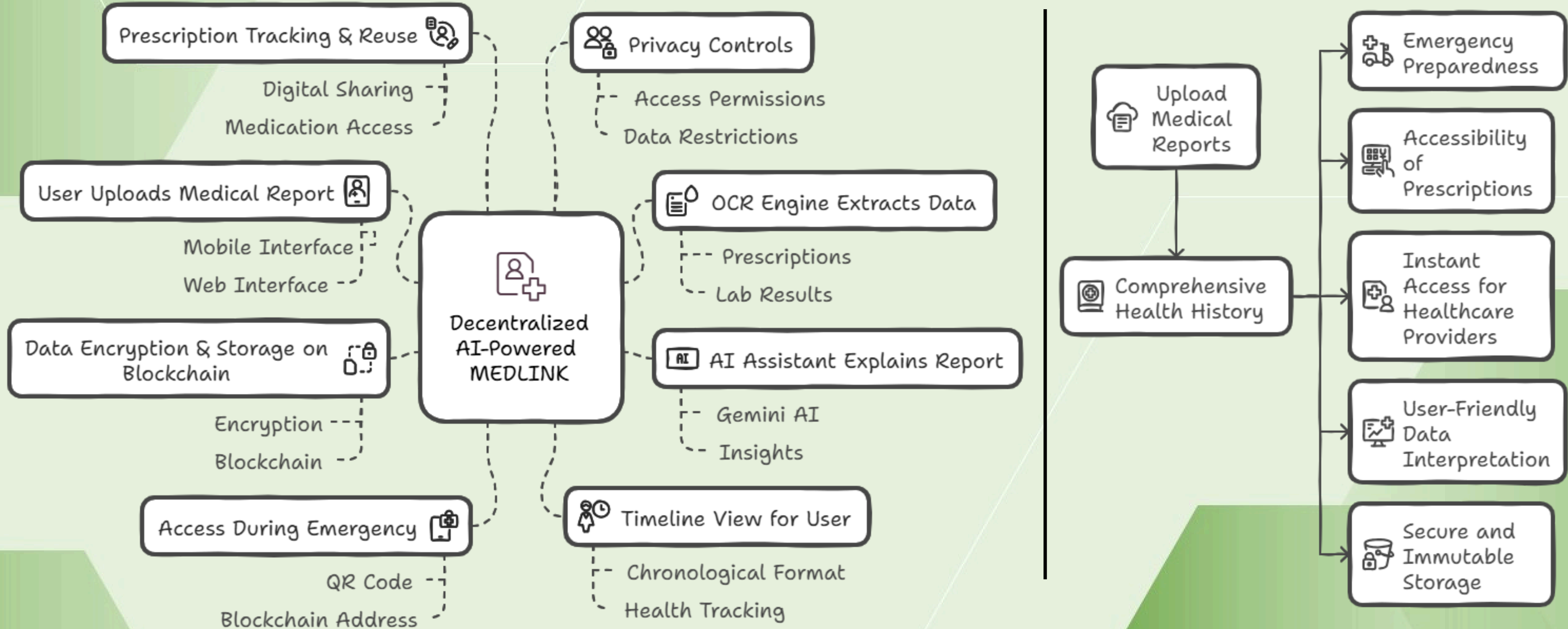Gemini / GPT-4 – for summarizing and explaining reports in easy language

Other Tools:

Web3.js / Ethers.js /Wagmi– for blockchain interaction
Cloudinary / Pinata – for file uploads (optional)
MetaMask – for user login with wallet

Workflow Diagram

Prescription Tracking & Reuse
- Digital Sharing
- Medication Access

Privacy Controls
- Access Permissions
- Data Restrictions

User Uploads Medical Report
- Mobile Interface
- Web Interface

OCR Engine Extracts Data
- Prescriptions
- Lab Results

Data Encryption & Storage on Blockchain
- Encryption
- Blockchain

AI Assistant Explains Report
- Gemini AI
- Insights

Decentralized AI-Powered MEDLINK

Access During Emergency
- QR Code
- Blockchain Address

Timeline View for User
- Chronological Format
- Health Tracking

Upload Medical Reports

Comprehensive Health History

- Emergency Preparedness
- Accessibility of Prescriptions
- Instant Access for Healthcare Providers
- User-Friendly Data Interpretation
- Secure and Immutable Storage

Target Audience and Engagement

ENGAGEMENT TOOLS

General Public: anyone who wants to manage their health records securely.

Doctors: can quickly understand patients history and provide efficient treatment.

- **Personalized** health reminders.
- Interactive **dashboards** with visual insights
- **AI chatbot** to explain reports.
- **Health summary** and suggestions.
- Emergency **"One Click Share"** button for urgent care.

CORE AUDIENCE

Families: can manage health data for elderly parents and children.

Hospitals and Clinics: integrate into their systems to improve record keeping and emergency care.

Future Scope

Health suggestions based on past reports- *like reminders for checkups and food advice.*

Mobile app integeration- *for easier access and usabiltiy.*

Zero knowledge Proofs- *to keep user data private even while verifying*

Global access- *systems can be used worldwide, especially helpful for travellers.*

Integration with insurance- *easier share history for claims.*

Family access option- *let trusted family members view records.*

Thank You – Team : ABC