**Team Orbit**

**Business Case: MedMate – Smart Prescription & Medicine Tracker**

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**Needs:**

**1.** **Functional Needs:**

These are the **core features** the system must have to fulfill its purpose:

**Prescription Management:**

* Upload digital prescriptions (manual entry or scanned image)
* Store and organize prescriptions by user and date

**2. User-Centered Needs**

**Families & Elderly Caretakers**

* Easy-to-use interface with accessibility support
* Centralized tracking for multiple family members

**Patients with Chronic Conditions**

* Automated and reliable medicine reminders
* Privacy for health data and prescription records

**3. Technical Needs (MERN Stack)**

* **Frontend**: React.js, Redux/Zustand, TailwindCSS or MUI
* **Backend**: Node.js, Express.js, RESTful APIs
* **Database**: MongoDB (cloud-hosted via MongoDB Atlas)
* **Authentication**: JWT-based login, bcrypt, RBAC
* **Hosting**: Vercel (frontend), Render/Heroku (backend), GitHub Actions (CI/CD)
* **Storage**: Cloudinary/Firebase for prescription uploads

**Solutions:**

**4. Digital Prescription Management**

**Problem:** Paper prescriptions are easily lost or misplaced.  
 **Solution:**

* Allows users or clinics to **upload prescriptions digitally** (images/data form).
* Securely stores and organizes prescriptions by patient, date, and doctor.

**Benefits:**

**5. Digital Prescription Management**

**Solution:**  
 Securely stores digital prescriptions, allowing users and clinics to upload and access them anytime.

**Benefits:**

* No risk of losing paper prescriptions
* Easy access during refills or emergencies
* Organized medical history for long-term care

**5. Family Profile Support**

**Solution:**  
 Allows families to manage multiple users (e.g., kids, elderly) from a single account.

**Benefits:**

* Centralized tracking for the whole household
* Caregivers can assist remotely
* Saves time and increases reliability

**Cost:**

Since the project is being developed in a group, the cost is primarily based on **time investment** and **free/open-source tools**. No major financial investment is required for development, except optional costs for deployment and third-party services. Timeline is of 4 months.

**ROI:**

**6. User & Social ROI (Problem-Solving Impact)**

**Input**: Time and free deployment resources

**Return**:

* Helps families manage medication efficiently
* Reduces health risks due to missed doses
* Empowers local pharmacies and clinics with tech tools
* Fills a real gap in healthcare systems in developing regions

**Verdict**: Strong social ROI, especially for elderly care and chronic illness management

**Risks:**

**7. Low User Adoption**

* **Description**: Without marketing or institutional adoption (e.g., clinics), gaining users organically could be slow.
* **Impact**: Reduced ROI, demotivation
* **Mitigation**: Offer it free for **university clinics**, run **pilot tests**, collect feedback

**8. Medical Accuracy Misuse Risk**

* **Description**: Users might treat the system as a medical advice tool rather than a tracking/reminder system.
* **Impact**: Misuse could lead to **health consequences**
* **Mitigation**: Add **disclaimer messages**, and avoid giving AI-based or medical recommendations without expert integration.

**Recommendation:**

**9. Start with an MVP (Minimum Viable Product)**

Build a core version first with essential features:

* Prescription upload and storage
* Make an interface which reflects about the basic needs of the project.  
   This allows faster development, early testing, and user feedback before scaling.

**10. Focus on UX for Elderly Users**

Since one key audience is elderly patients or their caregivers:

* Use **large fonts**, **high contrast themes**, and **clear icons**
* Keep interactions simple: “Take Dose,” “Snooze,” “Refill Now”
* Enable voice prompts or audio alerts in later phases

**11. Secure User Data**

Because the platform handles sensitive health info:

* Implement **JWT-based authentication**, **HTTPS**, and **data encryption**
* Store only necessary data, avoid over-collection
* Add disclaimers and comply with **HIPAA/GDPR** for future scaling

**12. Keep Future Scalability in Mind**

* Use **modular architecture** (separate services for reminders, auth, refills)
* Deploy on platforms like **Render or Railway** for auto-scaling
* Monitor logs and performance from the start .

**Future Enhancements:**

**13. Plan for Mobile Accessibility**

Eventually launch a **React Native mobile app** to:

* Send push notifications
* Allow quick dose marking
* Work offline for basic functionality