# Project Proposal

## Project Proposal

### 1. Title

**MediHub**

### 2. Executive Summary

MediHub is a hyper-local supermarket for the medical-healthcare industry, providing a comprehensive platform for patients and healthcare providers to connect, purchase, and manage their healthcare needs. It offers a seamless and secure experience for users, empowering them with convenient access to essential medical supplies, doctor appointments, and personalized healthcare advice.

### 3. Technology Stack Recommendation

**Frontend:**

- React.js - Single-page application framework for building dynamic and responsive user interfaces.
- Tailwind CSS - Utility-first CSS framework for rapid and customizable styling.
- TypeScript - Superset of JavaScript that provides static type checking and enhances code quality.

**Backend:**

- FastAPI - High-performance web framework for building RESTful APIs in Python.
- MongoDB - Document-oriented database for flexible data modeling and storage.
- Redis - In-memory data structure store for caching and real-time data processing.

**Justification:**

This technology stack is chosen for its scalability, performance, and alignment with the project's objectives. FastAPI provides a robust framework for building efficient APIs, while MongoDB and Redis offer flexibility and speed for data management. React.js and Tailwind CSS enable the creation of engaging and user-friendly interfaces. TypeScript ensures code reliability and maintains a high level of quality throughout the application.

**Potential Alternatives:**

- Django - Python-based web framework for full-stack development.
- PostgreSQL - Relational database management system.
- Angular - TypeScript-based framework for building enterprise-grade applications.

### 4. Technology Tags

- Healthcare
- E-commerce
- Appointment Scheduling
- User Authentication
- Secure Payments

### 5. Major Features and Sub-Features

| Main Feature | Sub-Features | Description | Complexity | Frontend Time (hours) | Backend Time (hours) | User Value |
|---|---|---|---|---|---|---|
| **Onboarding** | - User Registration | Allows users to create an account with basic personal and medical information. | Low | 1 | 2 | Medium |
| | - Provider Registration | Enables healthcare providers to register and create profiles showcasing their services. | Low | 1 | 2 | Medium |
| | - Profile Management | Allows users and providers to view, edit, and update their profiles. | Low | 1 | 2 | Medium |
| **Product Catalog** | - Search and Filter | Provides advanced search and filtering options for users to find specific products. | Medium | 3 | 4 | High |
| | - Product Display | Showcases products with detailed information, including images, prices, and availability. | Low | 1.5 | 2 | Medium |
| | - Cart Management | Enables users to add and manage items in their shopping cart. | Low | 1 | 2 | Medium |
| **Appointment Scheduling** | - Doctor Search | Allows users to search for doctors based on specialty, location, and availability. | Medium | 3 | 4 | High |
| | - Time Slot Selection | Enables users to select available time slots for appointments. | Low | 1 | 2 | Medium |
| | - Appointment Booking | Facilitates the booking of appointments with selected doctors. | Medium | 2 | 3 | High |
| **Reviews and Ratings** | - Product Reviews | Allows users to leave reviews and ratings for products they have purchased. | Low | 1 | 2 | High |
| | - Provider Reviews | Enables users to rate and review healthcare providers based on their experiences. | Low | 1 | 2 | Medium |
| **Blogs and Articles** | - Health Information | Provides users with access to credible health information and medical advice. | Medium | 3 | 4 | High |
| | - Doctor Articles | Allows healthcare providers to publish articles on health-related topics. | Medium | 2 | 3 | High |
| **Doctor Scheduling** | - Calendar Management | Enables doctors to manage their schedules and availability for appointments. | Medium | 2 | 3 | Medium |

| Main Feature | Sub-Features | Description | Complexity | Frontend Time (hours) | Backend Time (hours) | User Value |
|---|---|---|---|---|---|---|
| | - Patient List | Provides a list of patients scheduled for appointments with each doctor. | Low | 1 | 2 | Medium |
| Payment Gateway | - Secure Transactions | Integrates with trusted payment gateways to ensure secure financial transactions. | High | 2 | 4 | High |
| | - Multiple Payment Options | Offers multiple payment options for users, including credit cards, debit cards, and net banking. | Low | 1 | 2 | Medium |
| Admin Dashboard | - User Management | Provides administrators with the ability to manage user accounts and permissions. | Medium | 2 | 3 | Medium |
| | - Product Management | Allows administrators to add, edit, and manage products in the catalog. | Medium | 2 | 3 | Medium |
| | - Appointment Management | Provides administrators with a centralized view of all appointments. | Low | 1 | 2 | Medium |

## 6. Timeline Breakdown

**Development Timeline:**

- Frontend Development: 120 hours
- Backend Development: 150 hours
- Database Design and Implementation: 60 hours
- API Integration: 40 hours
- Server Setup and Configuration: 20 hours
- Continuous Integration/Continuous Deployment Setup: 20 hours

**Total Estimated Timeline:** 410 hours (approximately 2.5 months)