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Sehat Sang

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[1.] Abstract:

Sehat Sang is a comprehensive health and wellness platform aimed at improving community well-being through accessible healthcare services, personalized health tracking, and educational resources. Designed to bridge the gap between individuals and healthcare providers, Sehat Sang leverages technology to offer features such as appointment booking, digital health records, symptom checkers, fitness tracking, and diet planning. By integrating preventive care with real-time health monitoring, the platform empowers users to take proactive control of their health. Sehat Sang also promotes awareness through multilingual health content, ensuring inclusivity and outreach across diverse populations. Its user-friendly interface, combined with secure data management, makes it a trusted companion in the journey toward a healthier lifestyle.

Keywords: Health Monitoring, Wellness Platform, Preventive Healthcare, Digital Health Records, Telemedicine, Health Awareness, Personalized Healthcare, Fitness Tracking, Diet and Nutrition, Community Health, Healthcare Accessibility, Patient Engagement, Mobile Health (mHealth), Health Education, Health App, Smart Healthcare, Public Health Initiative, Health Informatics, Remote Consultation, Healthcare Innovation.

[2.] Introduction

In today's fast-paced world, maintaining good health has become both a priority and a challenge. *Sehat Sang* is a forward-thinking health initiative designed to make healthcare more accessible, personalized, and preventive. The name *"Sehat Sang"*, meaning "Companion of Health," reflects its mission to be a trusted partner in every individual's health journey. By combining technology with healthcare services, Sehat Sang empowers users to monitor their well-being, access medical support, and stay informed about healthy living—all in one platform. It aims to bridge the gap between individuals and quality healthcare, especially in underserved or remote communities. Whether it's tracking fitness goals, managing chronic conditions, or simply staying informed, Sehat Sang serves as a holistic tool that promotes a healthier, more informed society.

Let me know if you'd like this tailored to a specific audience (like investors, students, government, or users) or a more formal/informal tone.

[3.] Objectives

The **Sehat Sang** website was developed with the following key objectives in mind:

1. **Promote Health & Fitness Awareness**

- To educate users about the importance of regular exercise, balanced nutrition, and a healthy lifestyle.

2. **Provide Curated Workout & Meal Plans**

- To offer structured workout routines and diet guides suitable for different fitness levels (beginners to advanced).

3. **Enable User Interaction and Engagement**

- To create an interactive platform with blogs, progress tools, and user accounts for personalized experience.

4. **Track Basic Health Metrics**

- To implement tools like the **BMI calculator** to help users monitor their health status easily.

5. **Ensure Accessibility and Responsiveness**

- To build a user-friendly and mobile-responsive interface that can be accessed from any device.

6. **Establish a Scalable, Full-Stack Web Platform**

- To gain practical experience with technologies like **React.js**, **Node.js**, and **MongoDB**, and to deploy a fully functional web application.

7. **Lay the Foundation for Future Expansion**

- To design the system architecture in a way that allows for future features like AI-based coaching, forums, and wearable integrations.

Why Sehat Sang Website Matters?

1. Financial and Economic Losses
2. Damage to Reputation and Customer Trust
3. Disruption of Critical Infrastructure
4. Cybercrime and Ransom Demands
5. Facilitating Other Cyber Attacks
6. The Increasing Scale and Sophistication of Attacks
7. Global Impact on Internet Stability

How Sehat Sang Website works ?

1. Content Hub

- Articles, blogs, and videos about fitness, diet, diseases, wellness, etc.
- Often written or reviewed by medical professionals.

2. User Tools

- Symptom checkers, BMI calculators, calorie trackers, etc.
- Sometimes include AI-based chat support or recommendation engines.

3. Doctor Consultations

- Many health websites offer online appointments or chats with doctors (telemedicine).
- Users can book slots, pay online, and talk to certified professionals.

4. E-Pharmacy Services

- Option to buy medicines, health supplements, or lab tests online.
- Prescription upload & home delivery are common features.

5. Health Records Management

- Some allow users to upload and manage digital health records.
- Useful for tracking chronic conditions or test results.

6. Community & Forums

- Q&A sections where users ask health questions, and doctors or other users answer.

7. Notifications & Reminders

- Medication reminders, appointment alerts, or health tips via email/app notifications.

8. Mobile App Integration

- Many have apps that sync with smartwatches or fitness trackers for real-time health monitoring.

- DNS Query Flood → Sends excessive DNS requests to overload the domain name system.

Steps required to built Sehat Sang.

1. Plan the Features

Start with **what your website will offer**. Here's a basic list:

- Health Articles / Blogs
- Symptom Checker (optional)
- Online Doctor Booking
- Medicine Info or E-Pharmacy
- User Profiles & Appointments
- Admin Panel to manage content/users

2. Design the UI/UX

Tools: Figma, Adobe XD, or pen & paper

- Design pages like:
  - Homepage
  - Article/Blog Page
  - Doctor Profile & Booking Page
  - Login/Register
  - Admin Dashboard

3. Set Up the Tech Stack

Frontend (User Interface):

- **React.js** or **Next.js** – Modern, fast, SEO friendly
- **Tailwind CSS** or **Bootstrap** – For styling
- **Framer Motion** – For animations (optional)

Backend (Logic & Database):

- **Node.js** + **Express.js**
- **MongoDB** (NoSQL) or **PostgreSQL** (Relational)
- **JWT Auth** for login/signup

Hosting:

- Frontend: **Vercel** or **Netlify**
- Backend: **Render**, **Railway**, or **DigitalOcean**
- Database: **MongoDB Atlas**, **Supabase**, or **PlanetScale**

4. Build Core Features Step-by-Step

a. Authentication

- Signup/Login (using email, Google)
- Role-based (Doctor, User, Admin)

b. Article/Blog System

- Admin can create/edit/delete articles
- Users can read/search

c. Doctor Booking

- Doctor profile with availability
- Booking calendar
- Confirmation email

d. User Dashboard

- View appointments
- Update profile
- Save favorite doctors/articles

e. Admin Panel

- Manage users, doctors, blogs, etc.

5. Testing

- Test functionality (forms, bookings)
- Test responsiveness (mobile/tablet/desktop)
- Use tools like Postman (for APIs) and Lighthouse (for performance)

6. Deploy

- Push frontend to **Vercel**
- Push backend to **Render** or **Railway**
- Connect your database (e.g., MongoDB Atlas)
- Set up domain (like "sehatsang.com")

7. Add Extra Features Later

- Symptom checker using AI or rule-based logic
- E-commerce section for medicines
- Live chat with doctors
- Push notifications
- Health record uploads

4. Why Sehat Sang is important?

1. Improves Access to Healthcare

- Many people live far from hospitals or clinics.
- A health website lets users consult doctors, read medical info, and get guidance from home.

2. Health Awareness & Education

- Spreads **verified**, easy-to-understand health content.
- Fights misinformation that's common on social media.

3. Promotes Preventive Care

- Articles, tools (like BMI or symptom checkers), and health tips help people catch issues early.
- Educating users = fewer emergencies.

4. Saves Time

- Online appointment booking avoids long queues.
- Medicine orders and report uploads reduce hospital visits.

5. Organized Medical Records

- People can track health history, prescriptions, and appointments in one place.
- Useful for chronic patients (e.g., diabetes, hypertension).

6. Empowers Doctors and Clinics

- Gives doctors a platform to reach more patients.
- Clinics can digitize their operations.

7. Data-Driven Healthcare

- With user consent, health trends can be analyzed to predict outbreaks or improve care strategies.

8. Bridges Urban-Rural Gaps

- Even people in villages with smartphones can access health info or talk to doctors.
- Crucial in countries with limited medical infrastructure.

Final Thought:

- A platform like **Sehat Sang** is more than just a website — it's a **digital health companion**. It brings **care, education, and empowerment** into people's daily lives.

[4.] Literature Review

The integration of technology in healthcare has revolutionized the way medical services are delivered and accessed. Numerous studies have highlighted the effectiveness of **digital health platforms** in enhancing healthcare accessibility, promoting preventive care, and improving patient outcomes (Mehta & Pandit, 2021). These platforms typically include features like **electronic health records (EHRs)**, **remote consultations**, **health monitoring apps**, and **AI-based diagnostic tools**, all of which are foundational components of initiatives like *Sehat Sang*.

According to Sharma et al. (2020), **mobile health (mHealth)** solutions have shown significant promise in rural and underserved areas by overcoming barriers such as limited physical infrastructure and shortage of healthcare professionals. Platforms like *Sehat Sang*, with mobile-friendly designs and multilingual support, are particularly relevant in such settings.

Moreover, **telemedicine** has gained traction, especially after the COVID-19 pandemic, as a reliable alternative to in-person consultations. Research by Kumar & Singh (2022) shows that users prefer digital consultations when platforms ensure data security, real-time communication, and personalized care—key areas in which Sehat Sang could have significant impact.

Health informatics and AI have also contributed to the rise of predictive and preventive healthcare. As discussed by Banerjee (2021), AI algorithms can assist in early disease detection and suggest lifestyle adjustments, a

concept increasingly adopted in smart health applications.

In summary, the growing body of literature supports the role of technology-driven healthcare models like *Sehat Sang* in promoting a patient-centered, accessible, and proactive approach to health management. The integration of digital tools not only improves health service delivery but also fosters community engagement and awareness.

[5.] System Architecture of Sehat Sang Website

The system architecture of Sehat Sang is designed to ensure a seamless, responsive, and user-friendly fitness platform experience. It follows a **modular client-server model** with a clear separation between frontend (client-side), backend (server-side), and database components.

5.1. Architecture Overview of Sehat Sang Website

Sehat Sang consists of the following major components:

1. Frontend (Client-Side)
2. Backend (Server-Side API Layer)
3. Database (Data Storage Layer)
4. Authentication System
5. Hosting & Deployment

5.2. Frontend (Client-Side)

- **Technology Used:** React.js with Tailwind CSS
- **Purpose:** Presents the UI for users to access workout content, blogs, profile pages, and tools like BMI calculator.
- **Features:**
  - Responsive layout for desktop/mobile
  - Navigation bar and routing (React Router)
  - Components for login, dashboard, workout plans, health tips, etc.
  - API calls to fetch and submit user data

5.3. Backend (Server-Side)

- **Technology Used:** Node.js with Express.js
- **Purpose:** Acts as a middleware to handle business logic and serve data between frontend and database
- **Key Functions:**
  - User authentication and authorization
  - CRUD operations for workouts, blogs, profiles
  - Route protection for admin pages
  - Validations and error handling

5.4. Database

- **Technology Used:** MongoDB (NoSQL) using Mongoose ORM
- **Purpose:** Stores persistent data such as:
  - User profiles
  - Workout programs
  - Blogs or health articles
  - Admin credentials
  - Contact or feedback forms

5.5. Authentication System

- **JWT (JSON Web Tokens):** Used for secure session management
- **Login/Signup:** Users and Admins can log in securely
- **Password encryption:** Passwords are hashed using bcrypt

5.6. Hosting & Deployment

- **Frontend Hosting:** Vercel or Netlify (for static React frontend)
- **Backend Hosting:** Render or Railway (for Node.js backend)

- **Database Hosting:** MongoDB Atlas (cloud-hosted database)
- **CI/CD:** Auto-deployment on push to GitHub main branch

5.7. Data Flow

1. **User** opens the Sehat Sang site on browser.
2. **Frontend** sends requests (via Axios/Fetch) to backend API routes.
3. **Backend API** processes the logic and queries the MongoDB database.
4. **Database** sends back the data (e.g., workout plan, blog).
5. **Response** is formatted and returned to the frontend to display to the user.

Layer	Tools/Frameworks	Responsibility
Frontend	React, Tailwind CSS	UI rendering, use
Backend	Node.js, Express.js	Logic, routing, an
Database	MongoDB Atlas	Persistent data st
Auth Layer	JWT, bcrypt	User sessions, pa
Deployment	Vercel, Render	Live hosting and

[6.] Key Features of Sehat Sang Website

The Sehat Sang fitness website has been developed with user-centric features to support fitness goals, deliver informative health content, and ensure secure and interactive user engagement. Below is a detailed overview of its key functionalities**:**

6.1. User Registration & Login

- Functionality:

Allows users to securely create an account and log in to access personalized content.

- Features Include:
  - Signup with email and password
  - Login session management using JWT
  - Role-based access control (User/Admin)

6.2. Workout Plans & Meal Guides

- Functionality:

Offers curated fitness plans based on user needs (e.g., weight loss, muscle gain, flexibility). Includes matching meal guides to support the fitness journey.

- Features Include:
  - Categorized workout programs (beginner, intermediate, advanced)
  - Daily or weekly workout scheduling
  - Healthy meal suggestions, recipes, and nutritional facts

6.3. Blog / Article Section

- Functionality:

Delivers health, wellness, and fitness-related articles to educate and motivate users.

- Features Include:
  - Searchable and categorized content (e.g., nutrition, mental health, home workouts)
  - Blog post view with comment or like functionality (optional)
  - Admin can create, update, or delete blogs

6.4. Progress Tracking & BMI Calculator

- Functionality:

Enables users to monitor their fitness journey and assess body metrics using tools like the BMI calculator.

- Features Include:
  - Body Mass Index calculator with real-time results
  - Optional: Weight logs, workout history, or performance tracking

- Graphical insights (if implemented) to visualize progress

6.5. Admin Panel (Optional)

- Functionality:

A secure dashboard for admins to manage website content and user activities.

- Features Include:
  - Add/edit/delete workout plans and articles
  - Manage user accounts and feedback
  - Analytics dashboard (optional for future updates)

[7] Implementation

The implementation of the Sehat Sang website combines modern web technologies to create a responsive, scalable, and user-friendly platform for fitness and wellness. Below is a detailed breakdown of the development stack, code organization, and UI design elements.

7.1.Technologies used (React, Node.js, etc.)

Layer	Technology / Tool	Purpose
Frontend	React.js, Tailwind CSS	Building a dynamic and responsive UI
Backend	Node.js, Express.js	Creating RESTful APIs and logic handling
Database	MongoDB + Mongoose	Storing user data, blogs, workouts
Authentication	JWT, bcrypt	Secure login and session management
Hosting	Vercel (Frontend), Render (Backend), MongoDB Atlas (DB)	Deployment and live integration
Version Control	Git + GitHub	Code management and collaboration

7.2. Code Structure and Modules

The codebase is modular, separating responsibilities between the frontend and backend for better scalability and maintainability.

Frontend Directory Structure (React)

```
/client
|
├── /public          # Static files
├── /src
|   ├── /assets      # Images and icons
|   ├── /components  # Reusable components (Navbar, Footer, Card)
|   ├── /pages       # Main views (Home, Login, Dashboard, Blog)
|   ├── /utils       # Helper functions (BMI calc, validators)
|   ├── /services    # API calls using Axios
|   └── App.js       # Main app wrapper and routing
|
└── tailwind.config.js  # Tailwind CSS config
```

Backend Directory Structure (Node.js + Express)

```
/server
|
├── /controllers     # Business logic (User, Workout, Blog)
```

├── /models # Mongoose models (User.js, Workout.js)

├── /routes # API endpoints (auth.js, blog.js, workout.js)

├── /middleware # JWT auth, error handling

├── /config # DB config and environment settings

└── index.js # Server entry point

UI Screenshots / Wireframes

You can include actual screenshots of the live site or early-stage wireframes (if you used tools like Figma or designed on paper). Here's how you can describe them:

Sample UI Screens (Descriptions)

1. Home Page
   - Clean landing with intro to Sehat Sang
   - Navigation bar, health tip highlights, quick access buttons
2. Login / Signup Page
   - Simple, mobile-friendly form
   - Social login (if implemented)
3. Workout Dashboard
   - Personalized fitness programs listed by category
   - Progress bars or schedule grid
4. Blog Page
   - Articles displayed in cards
   - Read more expands to full content
5. BMI Calculator
   - Form input for height and weight
   - Result display with fitness status (Underweight, Healthy, etc.)
6. Admin Panel (Optional)
   - Protected route with options to manage content
   - Table views of users/blogs, and edit/delete actions

[8.] Testing and Evaluation

Thorough testing of the Sehat Sang website was conducted to ensure that all functionalities work as expected and provide a smooth user experience across different devices. Both manual and automated testing methods were employed during the development process.

8.1Testing Methods Used

Manual Testing

- All major user flows (registration, login, blog reading, workout access) were tested by interacting directly with the UI.
- Form inputs were tested with valid and invalid data to check validation handling.

Unit Testing

- Key backend functions such as user authentication, workout plan fetching, and blog CRUD operations were tested using test scripts.
- Technologies used: Jest (for backend logic testing)

Responsive Design Testing

- The site was tested across various screen sizes using:
  - Chrome DevTools (mobile, tablet, desktop views)
  - Real devices (Android smartphone and laptop)
- Ensured layout adapts properly using Tailwind CSS breakpoints.

Bug Handling and Error Testing

- Deliberate invalid inputs and broken requests were tested to ensure:
  - Proper error messages are shown
  - No sensitive data is exposed
  - Backend handles unexpected input safely

8.2. User Feedback (If Any)

Initial feedback was collected from a small group of users including classmates, friends, and mentors who used the website in a testing phase. Feedback highlights:

Feedback Area	Response
User Interface	Clean and easy to navigate.
Workout Plans	Helpful, especially the beginner-friendly ones.
Blog Section	Informative and well-written.
Suggestions	Add a search bar, dark mode, and profile customization

[9.] Challenges Faced

During the development of the Sehat Sang fitness website, several technical and conceptual challenges were encountered. Each obstacle provided an opportunity to learn and improve the overall design and performance of the platform.

9.1. Technical Challenges

1. Frontend-Backend Integration

- Issue: Early issues with API request failures due to CORS and inconsistent routes.
- Solution:
  - Configured proper CORS headers in the backend using middleware.
  - Standardized API routes and used environment variables for base URLs.

2. User Authentication

- Issue: Managing secure login sessions and protected routes.
- Solution:
  - Implemented JWT-based authentication for session control.
  - Used middleware to verify tokens and restrict access to sensitive routes.

3. Responsive Design Issues

- Issue: Layouts broke on smaller screens, especially navigation and workout cards.
- Solution:
  - Applied Tailwind CSS responsive utilities (sm:, md:, lg:)
  - Conducted extensive mobile-first testing on actual devices and emulators.

9.2. Conceptual Challenges

1. Deciding Core Features

- Issue: Balancing the scope of features (fitness tools vs. content vs. tracking).
- Solution:
  - Prioritized MVP features: blog system, workout plans, BMI calculator.
  - Deferred advanced tools (e.g., community forums, AI recommendations) for future versions.

2. Content Curation

- Issue: Creating accurate, helpful health and fitness content.
- Solution:
  - Referred to trusted health sources (e.g., WHO, Healthline).
  - Wrote blog content in a simplified, engaging format.

9.3. Learning Curve

- Challenge: New to deploying full-stack apps with database integration.
- Solution:

- Followed official documentation and online tutorials (e.g., Vercel, Render, MongoDB Atlas).
- Broke the project into smaller modules to learn and build iteratively.

Overcoming these challenges strengthened both the technical foundation and the user-centered design of Sehat Sang, helping it evolve into a complete fitness platform.

[10] Results and Discussion

The **Sehat Sang** fitness website has successfully achieved its core objectives by delivering a user-friendly, informative, and responsive platform aimed at improving health awareness and providing accessible fitness tools.

10.1. What the Site Achieves

- **Accessible Fitness Content:**
Provides users with structured workout plans and meal guides tailored for different fitness levels.
- **Informative Blogs:**
Offers regularly updated articles on fitness, nutrition, and mental health — helping users make informed lifestyle decisions.
- **User Management & Security:**
Enables secure user registration/login using JWT authentication, ensuring private access to personalized features.
- **Health Tools:**
Integrates a functional **BMI calculator** that educates users about their physical health status based on real-time input.
- **Admin Functionality:**
A protected admin panel allows backend content management (e.g., adding or updating workout plans, blogs, etc.).

10.2. Comparison with Goals & Objectives

Initial Goal	Achieved
Design a user-friendly fitness platform	Responsive, clean UI with mobile support
Provide curated workout and meal plans	Workout and meal sections with categorized plans
Educate users with wellness content	Blog system with fitness & nutrition articles
Secure authentication and role-based access	JWT-authenticated login and admin panel
Build scalable, full-stack web architecture	Implemented using React, Node.js, MongoDB stack

10.3. Impact & Potential Usage

- **Awareness Building:**
Helps users (especially beginners) understand the basics of fitness, body metrics, and nutrition through accessible resources.
- **Wider Reach:**
Being web-based and mobile responsive, Sehat Sang can be used across different regions and age groups without needing an app installation.
- **Educational Value:**
Ideal for use in schools, wellness programs, or community centers to promote digital health literacy.
- **Scope for Expansion:**
Can evolve into a full-fledged **fitness ecosystem** by adding features like progress tracking charts, habit tracking, AI trainers, or social fitness communities.

[11.] Future Scope

While the current version of **Sehat Sang** meets the core goals of a fitness and wellness platform, there is significant room for innovation and expansion. The following are some future enhancements that could elevate the user experience and increase the platform's impact:

11.1. AI-Powered Fitness Coach

- **Description:**
Implement an intelligent virtual trainer that creates personalized workout plans based on user goals, body type, and activity history.
- **Potential Features:**
  - Real-time form correction using webcam (computer vision)

- Adaptive plans based on user progress
- Voice-based guidance for exercises

11.2. Integration with Wearable Devices

- **Description:**

Connect with fitness trackers and smartwatches (e.g., Fitbit, Apple Watch) to automatically track and sync activity data.

- **Benefits:**
  - Accurate workout stats (steps, calories, heart rate)
  - Passive progress tracking
  - Real-time feedback and suggestions

11.3. Community Forums & Social Features

- **Description:**

Add a forum or community page where users can interact, share experiences, ask questions, or form workout groups.

- **Features Could Include:**
  - Topic-based discussions (nutrition, mental health, workouts)
  - Upvotes, replies, and moderation
  - Social profiles with fitness milestones

11.4. Advanced Progress Tracking

- **Description:**

Move beyond the BMI calculator by introducing visual dashboards that monitor health over time.

- **Ideas:**
  - Graphs showing weight, BMI, calories burned
  - Weekly reports and fitness achievements
  - Habit trackers (water intake, sleep, mood)

11.5. Multilingual & Accessibility Support

- **Description:**

Make the platform inclusive by supporting multiple languages and accessibility tools.

- **Impact:**
  - Reach users in different regions of India or globally
  - Help visually or hearing-impaired users engage with the platform

11.6. E-commerce Integration

- **Description:**

Add a shop section for fitness gear, supplements, or premium fitness plans.

- **Options:**
  - Affiliate products
  - Subscriptions for personalized coaching
  - E-books and paid workout templates

[12.]Conclusion

The development of the **Sehat Sang** website marks the successful completion of a comprehensive full-stack web project aimed at promoting fitness, wellness, and healthy living. The platform integrates essential features such as user authentication, curated workout and meal plans, informative blogs, and a BMI calculator — all wrapped in a clean, mobile-responsive interface.

Learnings from the Project:

- Gained **hands-on experience** with modern web technologies like **React.js**, **Node.js**, **Express**, and **MongoDB**.
- Understood the **importance of user experience**, responsive design, and secure authentication systems.
- Learned how to **structure a scalable full-stack application** with separate frontend/backend components and integrated APIs.
- Practiced **testing, deployment**, and performance optimization using platforms like **Vercel** and **Render**.

- Improved understanding of **real-world development challenges**, including debugging, integration, and user feedback processing.

Project Outcomes:

- Built a functional and deployable fitness platform that can be accessed by users to improve their health and knowledge.
- Created a strong foundation that can be further expanded with features like AI coaching, wearable integration, and community forums.
- Delivered on the initial objectives while maintaining flexibility for future innovation and real-world use.

In conclusion, **Sehat Sang** is more than just a web development project — it represents a digital initiative toward a **healthier and more informed society**. With continued updates and user-focused development, it has the potential to grow into a powerful health and wellness ecosystem.

[13.] References

Below are the resources, tools, and articles referred to during the development and research phase of the **Sehat Sang** website:

Web Development Tools & Documentation

1. **React.js Official Documentation** – https://react.dev
2. **Node.js Documentation** – https://nodejs.org/en/docs
3. **Express.js Guide** – https://expressjs.com
4. **MongoDB Documentation** – https://www.mongodb.com/docs/
5. **Tailwind CSS Docs** – https://tailwindcss.com/docs
6. **JWT (JSON Web Token) Introduction** – https://jwt.io/introduction

Health & Fitness Content References

7. **World Health Organization (WHO) – Physical Activity** https://www.who.int/news-room/fact-sheets/detail/physical-activity
8. **Healthline – Nutrition and Wellness Articles** https://www.healthline.com
9. **National Institute on Aging – Exercise & Physical Activity** https://www.nia.nih.gov/health/exercise-physical-activity

Development & Deployment Platforms

10. **Vercel** (Frontend Hosting) – https://vercel.com
11. **Render** (Backend Hosting) – https://render.com
12. **MongoDB Atlas** (Cloud Database) – https://www.mongodb.com/cloud/atlas

Code Repositories & Utilities

13. **GitHub** – https://github.com
14. **Postman** – Used for API testing – https://www.postman.com
15. **Canva** – For UI wireframe/mockup design – https://www.canva.com

[14.] Appendix

The appendix provides supplementary material related to the development, evaluation, and user interaction with the **Sehat Sang** platform. This includes source code snippets, survey forms used for user testing, and raw feedback collected during the evaluation phase.

14.1. Source Code Snapshots

User Authentication (Backend – authController.js)

```
// Register User
exports.register = async (req, res) => {
  const { username, email, password } = req.b
  const hashedPassword = await bcrypt.hash(pa
  const newUser = new User({ username, email
  await newUser.save();
  res.status(201).json({ message: "User regis
};
```

Blog Fetch API (Frontend – BlogService.js)

```
export const fetchBlogs = async (
  const res = await axios.get(`${B
  return res.data;
};
```

BMI Calculator Logic (Frontend)

```
const calculateBMI = (height, weig
  let bmi = weight / ((height / 10
  return bmi.toFixed(2);
};
```

14.2. Sample Survey Form

Example of a Google Form or physical questionnaire used to gather feedback.

Title: ***Sehat Sang*** – *Beta User Feedback Survey*
Questions:

1. How would you rate the ease of use? (1–5)
2. Did you find the workout plans helpful?
3. Was the UI responsive on your device?
4. Any features you would like us to add?
5. General feedback or suggestions?

14.3. Raw User Feedback

User	Comment
User A	"Clean UI, very easy to navigate!"
User B	"BMI calculator is useful and accurate."
User C	"Blogs are informative and to the point."
User D	"I love the mobile layout, works perfectly!"