

Institution Details

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Project Details

Project Title	Help.com		
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Project Area of Specialization	Web, Artificial Intelligence		
Project Start Date	Aug 2024	Project End Date	May 2025

Project Summary:

In today's fast-paced world, communities need streamlined platforms to facilitate charitable actions, such as donations and volunteering. Help.com is an innovative social welfare platform designed to make giving and receiving aid more accessible, efficient, and organized. The platform offers a centralized space where users can easily manage profiles, donate items, request help, and participate in volunteer activities, all while promoting a strong sense of community. By leveraging modern web technologies, Help.com simplifies the entire process, enabling individuals, volunteers, and organizations to collaborate for the greater good.

Help.com provides a personalized experience with detailed user profiles for individuals, volunteers, and organizations. The platform's donation system allows users to post items they wish to donate—such as clothes, food, or medical supplies—categorized by type, along with detailed descriptions and photos to ensure transparency. Those in need can request items, and the platform uses location-based and priority-based algorithms to match donations with recipients efficiently. Additionally, Help.com offers a dedicated volunteer management system where organizations can post opportunities, and users can sign up for activities based on their skills and availability. To enhance the user experience, Help.com integrates Google Maps API for locating nearby drop-off points and volunteer events.

The platform also includes advanced features like an AI-powered chatbot to assist users in navigating the website, answering FAQs, and guiding them through processes such as registration and donation. This chatbot ensures that users can find the help they need, whether it's information about upcoming drives or technical support. The system's donation logistics feature offers a comprehensive solution for handling donations, with options for scheduling pickups or drop-offs, tracking the distribution of goods, and keeping both donors and recipients informed through real-time notifications. This efficient system ensures that contributions reach those in need quickly and effectively.

Help.com is more than just a donation platform; it also serves as a hub for showcasing community achievements, highlighting successful drives and events, and sharing user feedback to encourage further engagement. An intuitive admin dashboard helps manage user activities, donations, and volunteer sign-ups, while also tracking engagement statistics for better decision-making. Help.com's comprehensive features ensure that giving back to the community is easy, organized, and impactful, creating a platform that empowers individuals and organizations to work together for a better future.

Project Objectives:

- **Facilitate Community Contributions:** Create a unified platform for donations, requests, and volunteer activities, simplifying social welfare participation.
- **Streamline Donation and Logistics:** Categorize and post donations with auto-matching based on location and urgency, offering pickup/drop-off scheduling and real-time updates.
- **Promote Volunteerism:** Enable users to sign up for volunteer opportunities and manage scheduling and tracking efficiently.
- **Enhance User Experience:** Integrate an AI chatbot for assistance and use Google Maps API for locating events and collection points.
- **Showcase Achievements:** Highlight milestones, events, and feedback to boost engagement and show impact.
- **Platform Administration:** Provide an admin dashboard to manage users, donations, volunteers, and insights for smooth operations.

Literature Review:

The evolution of web-based platforms has greatly transformed how communities engage in volunteering and donations. Platforms that facilitate these activities have simplified the process of connecting donors, volunteers, and those in need. A review of popular platforms reveals key features that enhance user experience and drive community engagement.

1. **Streamlined Donation Processes:**

Platforms like GoFundMe and GiveDirectly make donating easy with user-friendly interfaces that allow donors to contribute quickly. These platforms also enable users to describe donated items and upload images, improving visibility and transparency for recipients.

2. **Tailored Matching Algorithms:**

Charity Navigator and Benevolent utilize matching algorithms to connect donors with recipients based on location, need, and available resources. This approach ensures efficient distribution and maximizes the impact of donations.

3. **Volunteer Opportunity Listings:**

VolunteerMatch and HandsOn Network excel in listing volunteer events and opportunities. They offer users the ability to filter opportunities based on interests and location, while providing notifications for relevant activities.

4. **Real-Time Updates:**

Platforms like Freecycle and OLIO provide real-time updates for both donations and volunteer opportunities. Users receive instant notifications on item availability or upcoming events, keeping everyone informed and enhancing engagement.

5. **Secure Management:**

Donation platforms prioritize secure transactions. Websites like DonorBox utilize encryption and secure payment gateways to protect user information, reducing fraud risks while ensuring safe transactions.

6. **Administrative Tools:**

Comprehensive admin tools are a hallmark of platforms like DonorBox, where administrators can manage donations, track volunteer participation, and oversee user activity through a centralized dashboard. This feature ensures smooth platform operation and community oversight.

Features:

1. **User Registration and Profiles**

- Users can register as individuals, volunteers, or organizations with detailed profiles.

- Profiles are customizable and include activity tracking.
2. **Volunteer Management**
 - Organizations can post volunteer opportunities, while users can sign up based on their availability and skills.
 - Management tools for tracking and scheduling volunteers' activities.
 3. **Donation and Fundraising**
 - **Easy Access:** Prominent button for donations on the homepage.
 - **Flexible Payment Options:** Users can choose direct bank transfers or online payment methods.
 - **Clear Instructions:** Detailed guidelines for bank transfers provided.
 - **Automated Receipts:** Confirmation emails sent for all transactions.
 4. **Our Work & Achievements**
 - Highlight successful events.
 - Showcase milestones and the impact created by the platform, including user interactions and positive feedback from the community.
 5. **Chatbot**
 - An AI-powered chatbot will guide users through the platform, providing assistance with common tasks such as registration, finding resources, and donation processes.
 6. **Donation Logistics & Distribution**
 - **Donation Posting and Item Categorization**
 - Users can post items they wish to donate, categorized by type (e.g., clothes, food, medical supplies).
 - Each item is listed with details such as quantity, condition, and any additional information.
 - Organizations or individuals in need can browse or request these items.
 - **Pickup Scheduling and Drop-off Points**
 - Donors can either drop off their items at designated collection points (located using Google Maps API) or request a pickup service.
 - Pickup services are handled by partnered delivery companies or local volunteers.
 - Volunteers can view nearby pickup requests and schedule a time to collect items.
 - Organizations can monitor available donations and plan distribution according to real-time needs
 - **Distribution Planning and Matching System**

- The platform can automatically match available donations with needs using location-based and priority-based algorithms.
- For example, if a shelter requests blankets, the system will prioritize nearby donations and volunteers for quicker delivery.

7. Notifications and Status Updates

- **Donors:** Receive notifications when their donation is picked up and when it has reached the recipient.
- **Recipients:** Receive notifications when requested items are on the way and the expected arrival time.

Project Implementation Method:

1. Requirement Gathering and Analysis

- Identify the target users (individuals, volunteers, organizations) and their needs.
- Define key features based on user needs, such as user profiles, donation management, volunteer tracking, and logistics.
- Analyze technical requirements for integrating APIs (Google Maps API, AI Chatbot) and payment gateways for donations.

2. Technology Stack Selection

- Use the MERN stack (MongoDB, Express, React, Node.js) for a scalable, responsive, and dynamic platform.
- Integrate Google Maps API for location-based features like finding nearby collection points or volunteer opportunities.
- Incorporate an AI Chatbot using technologies like Dialogflow or OpenAI to assist users with common queries and navigation.

3. System Architecture Design

- Frontend Design: Use React.js to create a user-friendly interface, ensuring a seamless experience across all devices.
- Backend Development: Implement the server-side logic using Node.js and Express to manage data, process user requests, and provide real-time updates.
- Database Management: Use MongoDB for handling user profiles, donation items, requests, volunteer opportunities, and activity logs.
- Admin Dashboard: Develop a robust backend interface for administrators to monitor user activity, manage donations, and track statistics.

4. Feature Development and Integration

- User Registration and Profiles: Implement role-based registration for individuals, volunteers, and organizations, with customizable profiles and activity tracking.
- Donation Management System: Build modules for posting donations, scheduling pickups, managing drop-off points, and tracking distribution using real-time data.
- Volunteer Management: Enable organizations to post opportunities, with tools to manage scheduling and volunteer activities.
- AI Chatbot: Integrate an AI-powered assistant to help users with navigation, FAQs, and support tasks such as registration and donation processes.
- Notifications and Status Updates: Implement real-time notifications for donors, recipients, and volunteers regarding their contributions and activities.

5. Testing and Quality Assurance

- Conduct unit testing for individual modules (registration, donation management, chatbot, volunteer management).
- Perform integration testing to ensure all components (frontend, backend, APIs) work cohesively.

- Carry out user acceptance testing (UAT) to validate the platform with a small group of users and gather feedback for improvements.

6. Deployment and Hosting

- Host the platform on a scalable cloud solution (e.g., AWS, Heroku) for high availability and flexibility.
- Set up continuous integration and deployment pipelines to ensure smooth updates and maintenance.

7. Monitoring and Maintenance

- Implement tools like Google Analytics to track user engagement and platform performance.
- Provide regular maintenance to ensure security, fix bugs, and roll out new features based on user feedback.

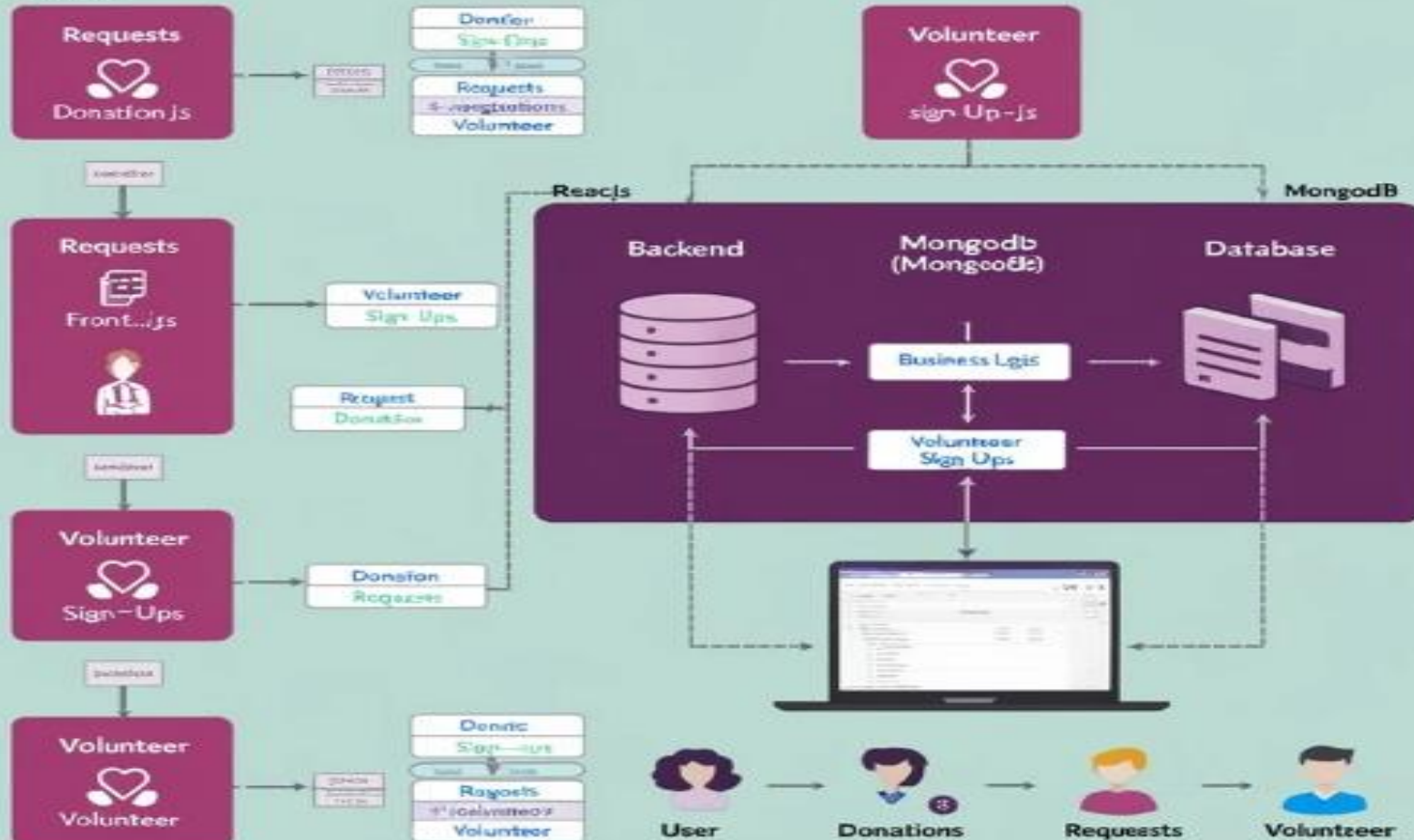
8. Post-Launch Support and Enhancements

- Gather post-launch feedback to identify areas for improvement.
- Plan and implement additional features such as mobile app versions, enhanced reporting tools, and community engagement features based on user needs.

System Diagram



Frontend



Benefits of the Project:

1. **Easy Donations and Volunteer Sign-Ups**

Help.com simplifies how people donate items and sign up for volunteer activities. With a user-friendly platform, individuals can easily post donations and find volunteer opportunities, removing common hurdles associated with charitable giving.

2. **Strengthened Community Connections**

The platform encourages community involvement by allowing users to engage in various charitable efforts. By showcasing success stories and milestones, Help.com helps users feel more connected to their contributions and the impact they have on others.

3. **Effective Resource Distribution**

Help.com ensures that donations reach those who need them most. By matching available items with urgent requests using real-time data, the platform helps streamline the distribution process, making it more efficient and effective.

4. **User-Friendly Experience**

The integration of an AI chatbot enhances the user experience by guiding users through tasks like registration and donations. Automated notifications keep users informed about the status of their contributions, making the entire process smoother.

5. **Transparency and Trust**

Help.com promotes transparency by allowing donors to track their donations and recipients to see the status of their requests. This openness builds trust in the platform and reassures users that their contributions are making a difference.

6. **Scalable for Future Growth**

Built on a robust tech stack, Help.com can easily grow as more users join and demand increases. This flexibility allows the platform to add new features and expand its reach to more communities over time.

7. **Empowering Volunteers and Organizations**

Help.com provides organizations with tools to manage volunteer opportunities effectively. Volunteers can easily find roles that match their skills and availability, encouraging more people to participate in community service.

Technical Details of Final Deliverable:

Technology Stack

- **Frontend:**
 - **React.js:** A JavaScript library for building interactive user interfaces, providing a dynamic and responsive experience for users.
 - **CSS and Bootstrap:** For styling and responsive design, ensuring that the platform is visually appealing and accessible on all devices.
- **Backend:**
 - **Node.js:** A JavaScript runtime environment for building the server-side application, allowing for high performance and scalability.
 - **Express.js:** A web application framework for Node.js that simplifies routing and middleware integration, making it easier to build RESTful APIs.
- **Database:**
 - **MongoDB:** A NoSQL database that stores user profiles, donation items, requests, and volunteer opportunities in a flexible, document-oriented format, facilitating easy data retrieval and management.

Core Features Implementation

- **User Registration and Profiles:**
 - Role-based registration for individuals, volunteers, and organizations, with customizable profiles to track user activity and engagement.
- **Donation Management System:**
 - Users can post donations with detailed descriptions, photos, and categories.
 - A matching algorithm that connects donations with recipients based on urgency and location.

- **Volunteer Management:**
 - Organizations can create and manage volunteer opportunities, allowing users to sign up based on their skills and availability.
- **Real-time Notifications:**
 - Automated email and in-app notifications for users regarding donation pickups, deliveries, and volunteer sign-ups.

Integration with External Services

- **Google Maps API:**
 - For locating nearby donation drop-off points and volunteer opportunities, enhancing the user experience by providing geographical context.

AI Chatbot Integration

- **Dialogflow or OpenAI API:**
 - An AI-powered chatbot will assist users with navigation, answer FAQs, and guide them through registration and donation processes, improving overall user satisfaction.

Testing and Quality Assurance

- **Unit Testing:** For individual components and functionalities to ensure they work as intended.
- **Integration Testing:** To verify that all parts of the system work together seamlessly.
- **User Acceptance Testing (UAT):** Involving real users to gather feedback and make necessary adjustments before the final launch.

Deployment

- **Cloud Hosting:** The platform will be hosted on a scalable cloud service (e.g., AWS, Heroku) to ensure high availability and performance.
- **Continuous Integration/Continuous Deployment (CI/CD):** Implemented for smooth updates and maintenance, allowing for quick rollout of new features and bug fixes.

Post-Launch Support and Maintenance

- Regular updates to the platform based on user feedback, ensuring it continues to meet community needs.
- Ongoing monitoring of system performance and security to maintain a reliable and safe user experience.

Final Deliverable of the Project:

- 1. Fully Functional Web Platform**
 - A live, web-based platform developed using the MERN stack (MongoDB, Express, React, Node.js), offering a seamless and user-friendly experience for individuals, volunteers, and organizations.
 - The platform will include all core functionalities such as User Registration, Profile Management, Donation Posting, Volunteer Opportunities, and Request Management.
 - The platform will be responsive, accessible on both desktop and mobile devices, and optimized for various screen sizes using CSS and Bootstrap.
- 2. Donation and Logistics Management System**
 - A comprehensive system allowing users to post donations with detailed descriptions and photos, categorized by type (e.g., clothes, food, medical supplies).
 - An automated matching system that connects available donations with recipients based on priority and location.
 - Integrated logistics features, such as scheduling donation pickups or using Google Maps API to find nearby drop-off points, as well as tracking and notifying users of donation status.
- 3. Volunteer Management Module**
 - A system enabling organizations to post volunteer opportunities and manage volunteers' activities.
 - Tools for volunteers to sign up for activities, schedule participation, and receive reminders and updates through real-time notifications.

4. **AI Chatbot for User Assistance**
 - A fully integrated AI-powered chatbot (using Dialogflow or OpenAI) to guide users through key processes such as registration, finding donations or volunteer opportunities, and answering common questions.
5. **Admin Dashboard**
 - A robust admin interface for monitoring platform activity, including user registrations, donation management, volunteer tracking, and platform statistics.
 - Features for reviewing and approving donations, managing user accounts, and generating insights based on community engagement.
6. **Notification and Status Update System**
 - Real-time email and in-app notifications to keep users informed of important updates, such as donation pickups, delivery status, and volunteer activity reminders.
 - Donors and recipients will receive timely notifications about the status of their items and requests.
7. **Achievements and Milestones Section**
 - A page dedicated to highlighting successful events, key milestones, and the impact of the platform on the community. This will include positive feedback, user interactions, and completed donation drives or volunteer events.
8. **Secure Payment Gateway Integration**
 - Integration with a reliable payment gateway (e.g., Stripe, PayPal) for handling monetary donations, ensuring secure transactions and providing automated receipts.
9. **Testing and Quality Assurance Reports**
 - Detailed testing documentation covering unit testing, integration testing, and user acceptance testing (UAT) to ensure the platform's stability, usability, and performance.
 - A report on quality assurance practices to guarantee that the final product meets all functional and non-functional requirements.
10. **Post-Launch Support Plan**
 - A post-launch support and maintenance plan that includes monitoring system performance, handling bug fixes, and rolling out feature updates based on user feedback.
11. **Deployment on Scalable Cloud Infrastructure**
 - The platform will be deployed on a scalable cloud environment (e.g., AWS, Heroku) with Continuous Integration/Continuous Deployment (CI/CD) pipelines set up for smooth ongoing development and maintenance. This ensures that the platform can handle increasing user loads and future feature enhancements.

Core Technology: MERN

Other Technology: Dialogflow

References:

1. Steele, J., and Adams, D., *Full Stack React, Node, and MongoDB: Learn to Build Modern Web Applications*, Addison-Wesley, Boston, 2019.
2. <https://www.gofundme.com>
3. <https://www.charitynavigator.org>

Project Key Milestones

Elapsed time in (days or weeks or month or quarter) since start of the project	Milestone	Deliverable
Month 1	Project Kickoff	<ul style="list-style-type: none"> - Finalized project scope and objectives - Completed requirements gathering
Month 2	Design Phase	<ul style="list-style-type: none"> - Defined technical stack (MERN) and architecture - Design documentation - Frontend design approval
Month 3	Frontend Development	<ul style="list-style-type: none"> - User authentication UI - Donation submission UI - Help request submission UI
Month 4	Backend Development	<ul style="list-style-type: none"> - Setup backend server with Node.js and Express.js - User authentication module - Database schema design using MongoDB
Month 5	Feature Implementation	<ul style="list-style-type: none"> - Donation management module - Help request management module - Volunteer opportunities listing and sign-up features
Month 6	Integration and Testing	<ul style="list-style-type: none"> - Integration of frontend and backend components - Core functionality testing - Bug fixes and optimizations
Month 7	User Acceptance Testing	<ul style="list-style-type: none"> - Beta testing with selected users - Feedback collection and iterations

		- Finalization of app features based on feedback
Month 8	Final Presentation and Launch	<ul style="list-style-type: none"> - Application launch and presentation with complete demonstration - Deployment to relevant platforms (e.g., web server, app stores)