

Institution Details



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| **Province** | Sindh | **City** | Karachi |
| **Institution** | National University of Computer and Emerging Sciences (FAST-NU) | **Campus** | Karachi |
| **Department** | Computer Science | **Degree Level** | BS |
| **Degree Program** | Computer Science | **Telephone** |  |
| **Fax** |  | | |

Supervisor Details



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| --- | --- | --- | --- |
| **Name** | Ms. Zain Noreen | **Gender** | Female |
| **Mobile** | - | **Office No** | Basement-II (Room-5) |
| **Email** | Zain.noreen@nu.edu.pk | **Designation** | Lecturer |
| **Qualification** | - | | |

Co-Supervisor Details



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| **Name** |  | **Gender** |  |
| **Mobile** |  | **Office No** |  |
| **Email** |  | **Designation** |  |
| **Qualification** |  | | |

Head of Department Details



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Project Details



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| **Project Title** | Help.com | | | |  | |  |
| **Group Details** | **Member 1 Name: Awesh Kumar**    **Member 1 Roll#: 21K-4526** | | | **Member 2 Name: Danish Nanjiani**    **Member 2 Roll#: 21K-3959** | | **Member 3 Name: Anil Kumar**    **Member 3 Roll#: 20K-0444** |  |
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| **Project Area of** | Web, Artificial Intelligence | | | | | |  |
| **Specialization** |  | |  | |  | |  |
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| **Project Start** | (As per FYP Calendar) | | **Project End Date** | | (As per FYP Calendar) | |  |
| **Date** |  | |  | |  | |  |
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| **Project** | In today’s world, addressing community needs through organized volunteering and donation platforms is crucial. Inspired by personal experience in volunteering for book drives, winter drives, and environmental initiatives, this project aims to create a web-based platform to facilitate donations, request help, and promote volunteerism. Leveraging modern web technologies, the platform will simplify the process for users to contribute to their communities by donating items like clothes and books, requesting assistance, and participating in volunteer activities.  The platform will provide a centralized hub for users to manage their profiles, view donation history, and connect with ongoing community projects. The donation system will allow users to contribute items, describe their condition, and even upload photos for better visibility. Individuals in need will be able to request help, specifying the urgency and their location for tailored matching with available resources. Additionally, the platform will list volunteer opportunities, allowing users to easily sign up for events and stay informed through notifications.  To enhance user experience, the platform will include additional features such as **Google API for City Search** and a **Chatbot**. The Google Places or Geocoding API will be integrated to allow users to search their respective locations, providing city-specific information and helping them find relevant events or drives based on their geographic location. Furthermore, a chatbot powered by services like Dialogflow or OpenAI will assist users by answering questions, helping with navigation, providing information about upcoming drives, and answering FAQs related to donations and volunteering.  An admin dashboard will ensure smooth management of the platform, including user activity, donations, requests, and volunteer sign-ups. Admins will also track statistics on community engagement and make decisions on reviewing and approving donations and help requests. | | | | | |  |
| **Summary (less** |  | | | | | |  |
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| **Project** |  | | | | | |  |
| **Objectives (less** | 1. Simplify the donation process by providing users a centralized location to offer clothes, books, and other items for those in need. 2. Facilitate volunteering opportunities for users by listing local events and initiatives. 3. Ensure efficient resource distribution by allowing individuals to request assistance and match with donors based on need and proximity. 4. Provide a comprehensive admin dashboard to track community engagement, donation reviews, and volunteer management. | | | | | |  |
| **than 2500** |  |
| **characters)** |  |
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| **Literature Review / Background Study** | 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.   **Comparative Analysis:**  A comparison of these platforms shows diverse strategies to enhance community engagement. Some prioritize ease of donations, while others focus on volunteer management and resource distribution. Key features such as real-time updates, secure donation handling, and admin tools increase both user engagement and platform effectiveness.  **Conclusion:**  In summary, modern technology-driven donation and volunteer platforms are transforming how communities support one another. By simplifying the processes, improving security, and providing tailored features, these platforms drive greater community involvement. As demand for organized and transparent systems grows, future innovations will further enhance how communities connect, donate, and volunteer | | | | | |  |
| **Project Implementation Method (less than 2500 characters)** | The proposed web-based platform will be developed using a client-server architecture, leveraging the MERN stack (MongoDB, Express.js, React.js, and Node.js) for a modern and scalable solution. The platform will consist of several key components to ensure seamless functionality for users, volunteers, and administrators.   1. **Frontend Development:** The frontend will be developed using React.js, which provides a responsive and dynamic user interface. It will enable users to browse donation listings, request help, and sign up for volunteer opportunities. Features will include user authentication, profile management, donation submission forms, and real-time notifications. 2. **Backend Development:** The backend will be built using Node.js and Express.js, providing the core server functionality. The backend will handle all database interactions, business logic, and API endpoints to manage donations, help requests, and volunteer sign-ups. MongoDB will be used as the database, ensuring scalable and flexible data management. Each donation, request, and volunteer opportunity will be securely stored and easily retrievable. 3. **Admin Dashboard:** A separate admin panel will be developed for managing the platform’s operations. Admins will have the ability to review and approve donations, monitor help requests, and track volunteer engagement. They will also have access to analytics, such as user activity statistics and engagement metrics, to optimize platform performance. 4. **Donation Matching and Request Management:** A matching algorithm will be implemented to connect donors with recipients based on the type of donation, urgency, and location. The system will allow users to upload photos of donated items and provide descriptions. Help requests will be categorized by priority to ensure urgent needs are met promptly. 5. **Volunteer Management:** The platform will provide a streamlined system for posting and managing volunteer opportunities. Users will be able to sign up for events and receive notifications about upcoming activities based on their preferences and location. Admins will oversee volunteer registration and ensure appropriate resource allocation for each event. 6. **Security and Privacy:** The platform will incorporate strong security protocols, including encrypted user data, secure login systems, and protected database connections. Payments, if integrated, will use secure gateways to ensure user safety. 7. **Testing and Deployment:** The development will follow an agile methodology, where features are developed in iterative sprints. Testing will be conducted continuously to ensure that bugs are identified and resolved. User feedback will be collected during beta testing for refinements. Finally, the platform will be deployed on a scalable cloud service to handle user growth. | | | | | |  |
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| **Technical** | 1. **User Registration & Profiles**    * User sign-up and login (with social media integration).    * Profile management (edit personal info, view contribution history, etc.). 2. **Item Offering System**    * Option for users to list items (clothes, books, etc.).    * Form for users to describe items they wish to share (category, condition, etc.).    * Ability to upload images of items for better visibility. 3. **Request for Help**    * Form for users to request assistance (e.g., need clothes, books, etc.).    * Option to specify urgency and location for effective matching. 4. **Volunteer Opportunities**    * Page listing available volunteer opportunities.    * Application process for users to sign up as volunteers.    * Notifications for upcoming events. 5. **Admin Dashboard**    * Manage users, contributions, and requests.    * Track statistics (number of items shared, volunteers, etc.).    * Review and approve requests and listings. 6. **Search & Filter Options**    * Search functionality for users to find specific items or requests.    * Filters for categories, locations, and urgency. 7. **Notifications & Updates**    * Email notifications for users about new listings, requests, and volunteer opportunities.    * Status updates on their contributions and requests. 8. **Community & Feedback**    * Section for testimonials and success stories.    * Forum or comment section for users to engage with one another. 9. **Our Work & Achievements**    * Highlight successful events and community engagement through images.    * Showcase milestones and the impact created by the platform, including user interactions and positive feedback from the community. 10. **Volunteer Experience Management**  * Users can document their volunteer experiences with organizations (e.g., MSDO, Pirbha Foundation). * Option to add details about roles, contributions, and impact made during volunteering.  1. **Reward System**    * Users earn points for activities such as sharing items, volunteering, and referrals, progressing through reward tiers (Bronze, Silver, Gold) to unlock benefits.    * Users receive badges for key milestones (e.g., sharing or volunteering multiple times) and can track their impact through an impact tracker.    * Points can be exchanged for rewards such as discounts or digital certificates, incentivizing ongoing participation.   **Technical Considerations**   1. **Front-End (React.js)**    * **Create a responsive and user-friendly interface.**    * **Use libraries like Material-UI or Bootstrap for styling.** 2. **Back-End (Node.js & Express)**    * **Set up RESTful APIs for user management, item offerings, and requests.**    * **Implement authentication (JWT or sessions).** 3. **Database (MongoDB)**    * **Design schemas for users, contributions, requests, and volunteers.**    * **Store user activity logs and interactions.** 4. **Deployment**    * **Consider using services like Heroku or Vercel for deployment.**    * **Set up a CI/CD pipeline for efficient updates.** | | | | | |  |
| **Details of Final Deliverable (less than 2500 characters)** |  | | | | | |  |
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| **Final Deliverable of the Project** | 1. **User Authentication Module:** This module will demonstrate the platform’s secure registration, login, and authentication processes. Users will be able to create accounts, manage their profiles, and securely access the platform. 2. **Donation and Request Management Module:** The donation management system will allow users to upload information about items they want to donate, including descriptions, images, and item condition. The request management system will enable individuals to submit help requests, specifying their needs and urgency. 3. **Volunteer Management Module:** This module will showcase the functionality for listing volunteer opportunities. Users will be able to sign up for events, and admins will have tools to manage registrations and monitor participation. 4. **Admin Dashboard:**   The admin dashboard will offer functionalities for managing users, reviewing donations and help requests, and tracking platform statistics such as user engagement and volunteer activity. Admins will also be able to approve or reject donations and requests.   1. **Notification and Messaging Module:** Notifications will keep users informed about new donation requests, volunteer events, or updates on their contributions. Admins and users will also have the option to communicate directly through a secure messaging system. 2. **Matching Algorithm:** The system will include a donation and help request matching algorithm that links donors with recipients based on location, item type, and urgency. This ensures that resources are distributed efficiently and effectively. 3. **Profile Management Module:**   Users will have access to their personal profiles, where they can view their donation history, request status, and upcoming volunteer activities. Admins will have tools to manage user profiles and data.   1. **Real-Time Updates and Notifications:** Users will receive real-time updates on their donations and help requests, ensuring a seamless and responsive experience. | | | | | |  |
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| **Core Industry (Optional)** | - | |  | | |  |  |
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| **Other** |  | |  | | |  |  |
| **Industries**  **(Optional)** | - | |  | | |  |  |
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| **Core** | MERN |  | |  |
| **Technology** |  | |  | | |  |  |
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| **Other** |  | |  | | |  |  |
| **Technologies (Optional)** | - | |  | | |  |  |
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| **Sustainable** |  | |  | | |  |  |
| **Development** | - | |  | | |  |  |
| **Goals**  **(Optional)** |  | |  | | |  |  |
|  |  | |  | | |  |  |
| 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 | | |  | | |  |  |
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| **Elapsed time in (days or weeks or month or quarter) since start of the project** | | | **Milestone** | | | **Deliverable** |  |
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| Month 1 |  | | |  | | --- | |  |  |  | | --- | | Project Kickoff | | | | - Finalized project scope and objectives - Completed requirements gathering |  |
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| Month 2 |  | | Design Phase | | | - Defined technical stack (MERN) and architecture  - Design documentation  - Frontend design approval |  |
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| Month 3 |  | | |  | | --- | |  |  |  | | --- | | Backend Development | | | | - Setup backend server with Node.js and Express.js - User authentication module  - Database schema design using MongoDB |  |
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| Month 4 |  | | |  | | --- | |  |  |  | | --- | | Frontend Development | | | | - User authentication UI - Donation submission UI - Help request submission UI |  |
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| Month 5 |  | | Feature Implementation | | | - Donation management module - Help request management module  - Volunteer opportunities listing and sign-up features |  |
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| Month 6 |  | | Integration and Testing | | | - Integration of frontend and backend components - Core functionality testing  - Bug fixes and optimizations |  |
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| Month 7 |  | | User Acceptance Testing | | | - Beta testing with selected users - Feedback collection and iterations  - Finalization of app features based on feedback |  |
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| Month 8 |  | | |  | | --- | | Final Presentation and Launch |  |  | | --- | |  | | | | - Application launch and presentation with complete demonstration  - Deployment to relevant platforms (e.g., web server, app stores) |  |
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Project Equipment Details



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| **Item(s) Name** | **Type** | **No. of Units** | **Per Unit Cost (in Rs)** | **Total (in Rs)** |
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