



# A Survey Paper on Development of a Web Based Application for an NGO with Integrated CRM

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## Abstract:

*In an increasingly interconnected world, the success of nonprofit organizations, particularly Non-Governmental Organizations (NGOs), relies heavily on their ability to cultivate and manage relationships with donors, volunteers, beneficiaries, and stakeholders. To address this critical need, our project focuses on the development of a customized CRM (Customer Relationship Management) system tailored for the unique requirements of an NGO. This project aims to design and implement a comprehensive CRM solution that empowers the NGO to efficiently manage and strengthen its connections with donors, coordinate volunteer efforts, streamline program management, and improve overall organizational effectiveness. The CRM system leverages modern technologies and data-driven insights to facilitate better decision-making, enhance communication, and advance the NGO's mission. Key features of the CRM system include donor management, volunteer coordination, fundraising campaign tracking, program participant management, and robust reporting capabilities. The system is designed with data security and compliance in mind, ensuring the protection of sensitive donor information and adherence to relevant data protection regulations. Throughout the development process, careful consideration is given to user adoption and ease of use, as successful implementation relies on the active engagement of NGO staff, volunteers, and stakeholders. Extensive training and support mechanisms are provided to ensure that the CRM becomes an integral tool in advancing the organization's goals. This project not only showcases technical prowess but also underscores the impact of technology in the nonprofit sector. The CRM system presented in this project serves as a valuable resource for NGOs seeking to optimize their operations, build stronger relationships, and make a more significant impact in the communities they serve.*

## Keywords:

CRM System, Web Development, Donor Management, Volunteer Coordination, User Adoption, Data Security, Reporting and Analytics, Fundraising Campaigns, Nonprofit Operations.

## I. INTRODUCTION

In a world where Non-Governmental Organizations (NGOs) stand at the forefront of addressing diverse societal challenges, the importance of effective relationship management cannot be overstated. NGOs rely heavily on the support, collaboration, and engagement of donors, volunteers, beneficiaries, and stakeholders to fulfil their missions. To excel in these relationships, NGOs increasingly turn to technology solutions that enable them to manage, analyse, and optimize these interactions efficiently and strategically.

The project at hand, titled "Development of a CRM System for Enhanced NGO Relationship Management," represents a significant engineering endeavour rooted in a profound sense of purpose. Its primary goal is to address a pressing need within the NGO sector—a need for an innovative and bespoke Customer Relationship Management (CRM) system that caters to the multifaceted and dynamic demands of NGOs.

Through this project, we envision a future where NGOs can leverage technology to build stronger relationships, drive greater impact, and fulfill their missions with increased efficiency and effectiveness. This report offers a comprehensive overview of the project's objectives, methodologies, achievements, and the transformative potential it holds for revolutionizing relationship management within the NGO sector.

## II. LITERATURE SURVEY

- This study describes the development of a customer relationship management (CRM) website for Almeera Skin Care beauty salon. The hospital had problems managing patient records, medication records, and medical records, leading to service problems. The aim of this study is to create information for solving these problems and to evaluate the impact of service quality, products, maintenance types and registration on customer satisfaction and fairness. System development using the FAST model; includes definition, problem analysis, needs analysis, design, decision making and physical design. The planning process includes patient data entry, product data entry, maintenance data entry, and registration data entry operations. The results show that the system makes it easier to manage business in beauty clinics and improves the overall service. [1]
- This study focuses on the development of e-CRM (electronic customer relationship management) for tourism resorts using Pasirmulya Tourism Village in Bandung Province, Indonesia. The aim is to improve the analysis, analysis and implementation of business plans in a sustainable way using the customer approach. This study shows the change in the mindset of business employees from profit-oriented to customer-oriented, focusing on customer satisfaction and loyalty.[2]
- This study introduces the development of Rangers 2.0, a web-based application to improve the registration process of prospective students at Raharja University. By integrating video conferencing into the company's business in real time, the system aims to go beyond social networks and facilitate the transfer of information required for registration. Adopt an interactive vCRM approach to deliver better virtual services. Expected benefits include improving services for future students through the optimization of Rangers 2.0, improving the efficiency of both parties and improving the overall building, improving the public image. This initiative demonstrates the university's commitment to using information technology to increase the efficiency and effectiveness of the online registration process.[3]
- This research paper explores the evolution of web development from the creation of the first web in 1991 by Tim Berners-Lee to 2021. In the digital age, online access from website is important for business. This article covers the history and modern process of web development, showing the various uses of the web for various purposes, including online information and web applications. Additionally, this study discusses the evolution of content delivery over the years, focusing on websites designed for mobile devices. Additionally, the study compared the performance of two web backend development technologies, Node.js and Python, in similar situations using tools such as Locust and Autocannon. This comparison focuses on understanding the effectiveness and efficiency of technologies in today's web development. [4]
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- As more and more people access the internet, the internet is becoming powerful and widely used. However, the use of web attacks has become an ongoing problem due to the possibility of one or more security vulnerabilities. Many researchers have developed solutions that can deal with specific attacks that do not identify vulnerabilities present in today's dynamic web applications. Therefore, the proposed system, called Vulnerability Scanner (VulScan), is able to detect six different attack groups to which web applications may be vulnerable. The system uses a proven crawling process to scan website request material (such as links, text, titles, etc.) and report defects. The detection capability of VulScan was evaluated on Damn Vulnerable Web Application (DVWA) and live web applications.[6]
- This study focuses on analyzing and developing a Customer Relationship Management (CRM) system to solve business problems and improve business strategies in the Umrah division of PT XYZ Tours & Travel Indonesia. This study is based on the analysis of the current business process of the Umrah department using object analysis and design (OOAD) to create a CRM system. The goal is to increase the efficiency of this process by using a CRM system. In the implementation phase, based on the results of the design phase, a Web-based object-oriented programming (OOP) approach was adopted using the PHP CodeIgniter framework and MySQL database. The resulting CRM website should simplify the customer relations process, facilitate personal interaction with customers and increase the company's business that is beneficial to the target audience.[7]
- This study addresses the information management problems faced by non-governmental organizations (NGOs) and explores the potential of social media software, especially in social media (NGOs), to solve these problems. The aim is to use NGO websites, which are frequently used by NGOs around the world, as a platform for the implementation of ESD. This article presents a framework for designing ESD-based NGO websites. The web design model will take into account the specific characteristics of NGOs and suggest ways to create a social experience that suits the needs and characteristics of organizations. The aim is to improve knowledge management in NGOs, including its specific points and limitations.[8]
- This article discusses the development of the NGO portal, a web platform designed for various non-governmental organizations (NGOs) to register, share their daily activities, and publish information on available work related to their organization. The platform allows users to follow their favorite NGOs, learn about their activities and interact by liking, commenting and sharing their messages. In this case, NGOs can share multimedia content such as photos and videos about their activities. Tools used to build this website include ReactJs and ReduxJs for the frontend, as well as JavaScript, HTML, and CSS. The backend is built using NodeJs and Express Js and uses MongoDB and Mongoose to manage the required data. The purpose of the NGO portal is to provide a broad platform where NGOs can present their work and to allow users to participate and learn about the work of NGOs they are interested in.[9]

- This article describes the development of a web-based application for the management of non-governmental organizations (NGOs). Unlike many NGO websites, which usually provide basic information, this proposal aims to improve the work of the organization, reduce information, reduce queues and improve interaction between organization members. The system contains information required for NGOs, connected to the application server, and accessible through web applications and Android applications. To ensure security and transparency, the proposed system includes a biometric interface that connects all relevant information in the organization. The goal is not only to provide information but also to use technology to improve the results and productivity of NGOs and provide models that can be used for other nonprofits with similar needs.[10]

### III. RESULTS

The integration of the CRM system and web application for Love Care Share Foundation has demonstrated significant positive outcomes. The streamlined donor management, volunteer coordination, and event planning within the CRM system have notably enhanced operational efficiency. Stakeholder engagement has improved through user-friendly interfaces, facilitating accessible portals for donations, event registration, and communication. The CRM system's data-driven features empower strategic decision-making, and robust security measures ensure compliance with data protection regulations. The creation of a centralized communication hub has strengthened engagement channels, while the scalable architecture supports future growth. User confirmation through training is recommended. Overall, the program was successful in establishing a digital platform for the Association, improving its ability to measure impact and supporting strategic planning as an organization fit for the role.

### IV. METHODOLOGY

- Value required:  
In-depth interviews and training to understand the needs of donor management, volunteer cooperation and organize events.
- System Architecture Design:  
Create architectural plans for entire web applications, including wireframing, prototyping, and defining database architecture.
- Web Application Development:  
Create a public website with features such as online giving, volunteer office, event management and social networking approach.
- CRM System Development:  
Design and implement a CRM system with standards to meet operational needs such as volunteer management and volunteer collaboration.
- Integrate CRM with web applications:  
Provides integration between CRM systems and Web applications for uninterrupted data flow and flawless process.
- Testing and Quality Assurance:  
Rigorous testing including performance, usability and integration to identify and resolve issues.
- User Training and Documentation:  
Provide training to users and provide comprehensive documentation for ongoing support.
- Installation and Setup:  
Deploy all web applications and CRM systems with correct configuration on the selected hosting infrastructure.
- Ongoing maintenance and support:  
Ensure ongoing support and ongoing security and performance monitoring post-deployment.
- Feedback:  
Create a feedback plan for staff, donors, and volunteers to inform feedback development.
- Project evaluation and iterative development:  
Conduct a comprehensive evaluation of the project to review benefits, challenges, and user satisfaction. The results are used for iterative improvements to meet the needs of the organization.

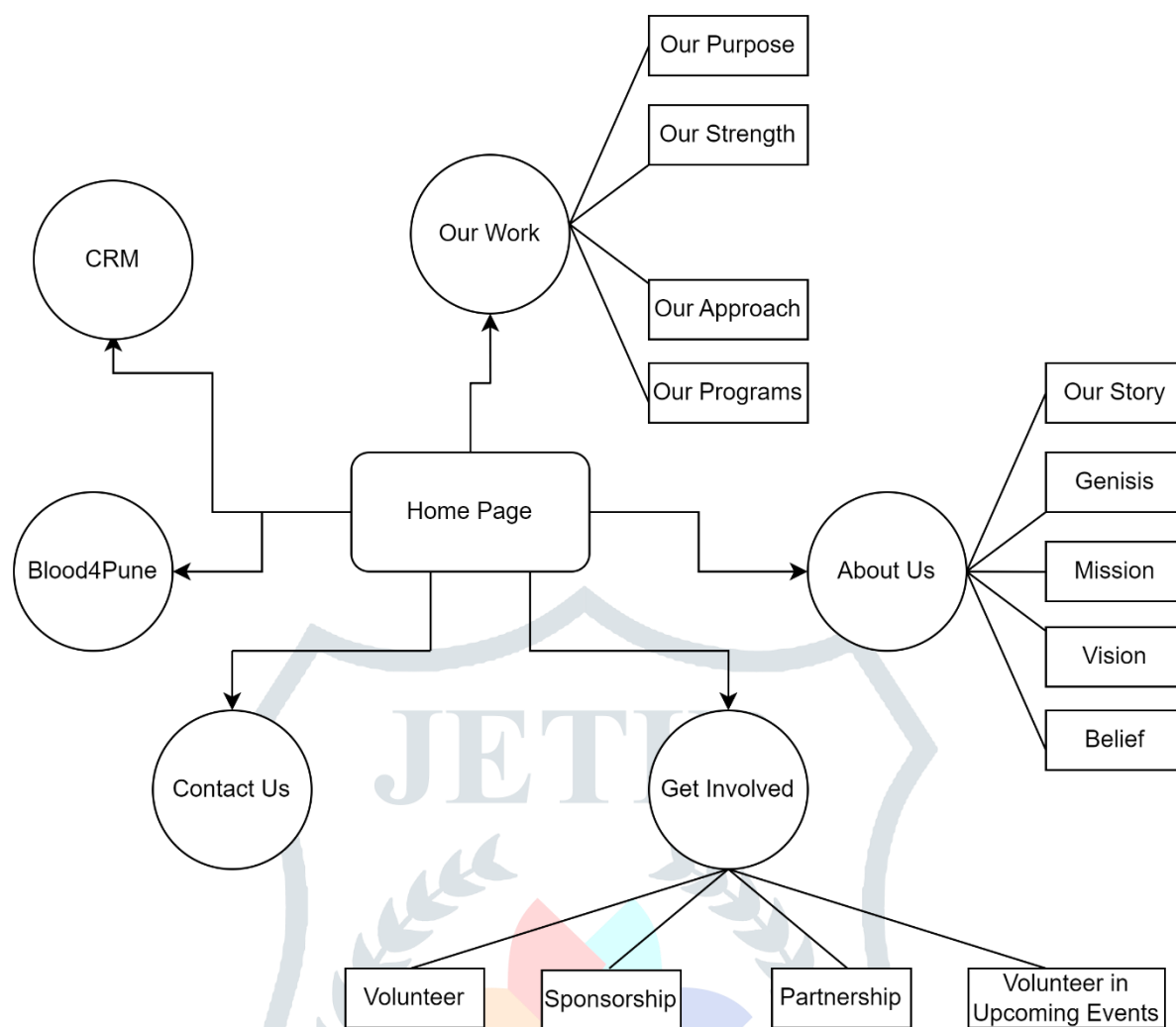


fig. block diagram

## V. Conclusion

Finally, the development and integration of a comprehensive web application and CRM system for the Love Care Share Foundation represented an effort to solve the organization's operational problems and improve its business position. The leadership process from needs assessment to ongoing maintenance has created a successful digital business. This integration increases operational efficiency by supporting donor management, volunteer coordination and communication. Effective customer advocacy and successful referrals have demonstrated alignment with the organization's goals. Looking forward, the nature of the project allows for continuous development and adaptation to the changing needs of the Solidarity Foundation. This measure is not only an advancement in technology, but also our commitment to improving stakeholder engagement and promoting sustained impact in human activities.

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