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Dynamic Web Application for Blood Bank

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Abstract: *Any organisation that manages the data of given blood in a physical mode incurs excessive costs and resources. Gathering data from collected blood packets, analysing, and organising procedures requires a higher level of qualified human resource as well as a significant amount of time to perform the operation. When compared to the present physical mode version, implementing an e-Blood Bank offers more benefits. One such e-service of providing Blood Bank through Web Application is our project 'NBB - National Blood Bank.' NBB provides information about accessible blood resources such as blood group, stock availability, and storage location, which users/clients can examine and use as needed. Both users and institutions, as clients, have their own registrations. By utilizing NBB, the specifics of blood storage locations may be retrieved with ease from anywhere at any time, saving time and resources.*

Keywords: HTML, CSS, JavaScript, MySQL

I. INTRODUCTION

1.1 HTML

HTML, or HyperText Markup Language, is the standard markup language for texts that are intended to be viewed on a web browser. Technologies such as Cascading Style Sheets (CSS) and programming languages like JavaScript can help. Web browsers receive HTML documents from a web server or locally stored files and convert them to multimedia web pages. HTML originally featured cues for the document's look and described the structure of a web page logically. HTML elements are the components that make up HTML pages. Images and other objects, such as interactive forms, can be embedded in the produced page using HTML structures. HTML allows you to create organised documents by indicating structural semantics for text elements like headers, paragraphs, lists, links, quotations, and other elements. Tags, which are written in angle brackets, separate HTML elements. Tags like image /> and input /> insert content into the page immediately. Other tags, such as p>, surround and offer information about document text, and may comprise sub-elements of other tags. Browsers do not show HTML tags; instead, they use them to interpret the page's content.

1.2 CSS

Cascading Style Sheets is a style sheet language for describing the appearance of a document authored in a markup language like HTML. Along with HTML and JavaScript, CSS is a key component of the World Wide Web. CSS was created to separate display from content, including layout, colours, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristics, allow multiple web pages to share formatting by specifying the relevant CSS in a separate.css file, which reduces complexity and repetition in the structural content, and allow the.css file to be cached to improve page load speed between the pages that share the file and its formatting. The separation of formatting and content also allows for the presentation of the same markup page in different styles for different rendering techniques, such as on-screen, in print, by voice , and on Braille-based tactile devices. If the information is viewed on a mobile device, CSS additionally provides rules for different formatting. If more than one style rule fits a specific element, the name cascading comes from the priority structure used to determine which rule applies. This priority-cascading system is well-known.

The World Wide Web Consortium is in charge of maintaining CSS specifications. RFC 2318 specifies text/css as an Internet media type for use with CSS in March 1998. The World Wide Web Consortium offers a free CSS validation service.

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1.3 JAVASCRIPT

JavaScript, sometimes known as JS, is a programming language that, together with HTML and CSS, is one of the foundational technologies of the World Wide Web. On the client side, over 97% of websites employ JavaScript for web page behaviour, with third-party libraries frequently incorporated. To run the code on the users' devices, all major web browsers have a dedicated JavaScript engine. JavaScript is an ECMAScript-compliant high-level, frequently just-in-time compiled language. It has first-class functions, dynamic typing, and prototype-based object orientation. It supports event-driven, functional, and imperative programming approaches and is multi-paradigm. For working with the Document Object Model, it includes application programming interfaces (APIs). Originally only used in web browsers, JavaScript engines are now found in a wide range of servers and apps. Node.js is the most popular runtime system for this purpose. Despite the fact that Java and JavaScript have similar names, syntax, and standard libraries, the two languages are very different in design.

1.3 MYSQL

The most popular open source database on the planet is MySQL. MySQL has become the main database choice for web-based applications, with high-profile web properties such as Facebook, Twitter, YouTube, Yahoo!, and others relying on its proven performance, dependability, and ease-of-use. Oracle is at the forefront of MySQL innovation, introducing new features to fuel next-generation web, cloud, mobile, and embedded applications. The open source MySQL Community Server and the private MySQL Enterprise Server are the two variants of MySQL available. MySQL Enterprise Server is distinguished by a set of proprietary extensions that are installed as server plugins, although it otherwise uses the same versioning system and code base as MySQL. MySQL can be manually created and installed from source code, but unless unique adjustments are required, it is most frequently installed from a binary package. The package management system on most Linux distributions can easily download and install MySQL, while security and optimization settings may require further tweaking.

II. RELATED WORKS

In this fast growing world, there is always a cravings for the new trend and technology which makes us to do the work efficiently and cosumes less amount of time and effort. Since everything is getting digitalised, people love to make things done virtually nowadays. Rehab S. Ali & et.al., (2017)[1] proposed the design for a web application to manage all blood donation and transfusion processes. It provides a obvious structure and outline for online web application for a blood bank. It mitigates the risk and difficulties for the blood needers tin getting the proper blood bag in an emergency scenario. The proposed application organizes and controls the whole critical processes related to blood donation, testing and storage of blood bags, and delivering it to the patient. Javed Akhtar Khan & et.al., (2016)[2] developed a system for Blood donor information filter based on seeker voice. It is made to work completely based on the user's voice. Due to lack of storage facilities blood bank is not able to store the blood this is the major problem face by the rural area as well as urban area blood bank. The objective of this paper to deal with the Vague Voice based donor information filter and make a particular blood group cluster with donor information. Rohit Kumar & et.al., (2021)[3] depicts a high level program to close the hole between blood givers and individuals needing blood. The Online Blood donation Administration Framework application is an approach to synchronize blood donation centers with emergency clinics with the assistance of the Web. It is a web application where enlisted clinics can check the accessibility of the necessary Blood and can send a blood solicitation to the closest blood donation center or comparable contributor as per the blood and can be controlled online through where fundamental.

III. EXISTING SYSTEM

In today's world, the existing method of requesting the required blood group through modes of phone call communication to friends and family members, social media applications such as WhatsApp status, Instagram stories, and other social media applications, the obtained output is not up to the maximum level of implementation, reach, and efficiency. These modes of communication do not encourage people to participate in the donor-finding process. Even if many new tech implied web applications and mobile applications exist in today's world, none of them are interconnected for better performance and not yet in the optimal implementation stage.

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IV. PROPOSED SYSTEM

Our objective and mission is to make the blood donation and distribution procedure easier for donors and recipients by streamlining the blood availability process. A centralized web platform that connects all medical institutions and blood banks, making it easier for people who need blood to find it. Users can find their desired blood group held in respective institutions or blood banks, along with data of its location, using the regular registration technique. As a result, our National Blood Bank web application - NBB – can manage emergency scenarios requiring blood after accidents, etc. with simplicity.

V. IMPLEMENTATION

5.1 Modules

1. Login
2. Register
3. Home
4. Find

A. Login

A login page is a web page or website entry page that requires user identification and authentication, which is often accomplished by providing a username and password combination. Logins might grant access to the entire site or just a portion of it. Logging in allows the website to track the user's activity and habits in addition to providing site access.

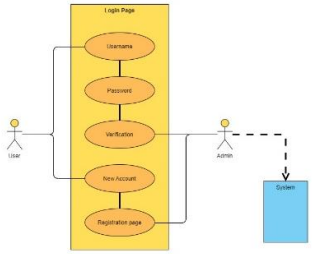

Fig 5.1 Use Case Diagram for Login Page

B. Register

A registration form is a set of fields into which a user enters information and submits it to a business or individual. You might want someone to fill out a registration form for a number of reasons. Customers are signed up for subscriptions, services, and other programs and plans using registration forms. Landing page registration forms are crucial, and they should be designed to entice users to sign up for your product, subscription, or service.

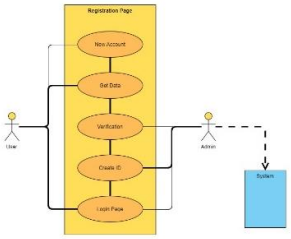

Fig 5.2 Use Case Diagram for Register Page

C. Home

A site's default or front page is called a home page. Web administrators can direct the user experience by controlling the home page. A home page is part of the natural way that the Internet has evolved to orient Web users and assist them in navigating the vast network of sites. The website's root directory contains the home pages. Many home pages serve as a virtual directory for a website, providing top-level menus from which users can explore the site further.

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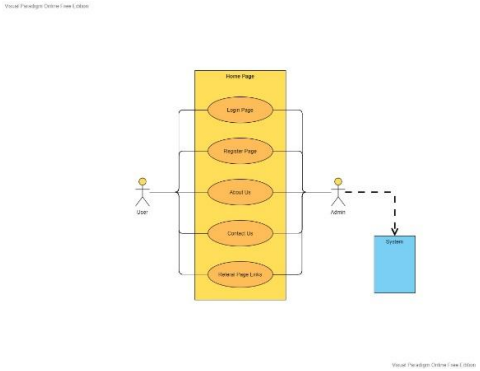

Fig 5.3 Use Case Diagram for Home Page

D. FIND

This module allows the user to look for the appropriate blood group in the specified location using the information provided by the user. The user's selected locality and necessary blood group are displayed on the locate page once the user has entered their information.

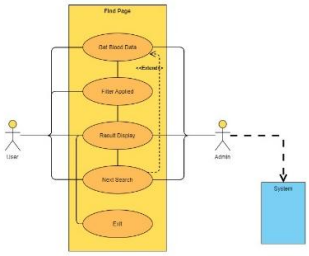

Fig 5.4 Use Case Diagram for Find Page

VI. CONCLUSION

Every day, technology brings us new advancements, lowering the amount of time it takes to complete tasks. In an emergency, the proposed technology might be utilised to shorten the time it takes to get needed blood to those who need it. People interested in donating blood can use the Android application to find a blood bank near them. In the event of an emergency, it also allows them to communicate with neighbouring donors. A critical component of the system is the database. For the system to function properly, the databases of hospitals and blood banks must be verified for consistency on a regular basis. The suggested method makes use of maps to help users find nearby blood donors/banks quickly.

VII. FUTURE WORK

In the future, we can provide a login option for hospitals to request blood, as well as for blood banks to maintain their donors, and if they require blood for stock purposes or if blood availability is low, they can contact donors for donation by email or SMS. In the future, we may be able to link all of the blood banks in a given city to establish a chain system that will make blood available to anyone in need. There are too many kinds of blood depending on the substance it contains; in the future, we can add information about the blood and its content based on the blood type that the patient is looking for.

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