**SOFTWARE REQUIREMENTS SPECIFICATIONS**

**INTRODUCTION:-**

**1.1 PURPOSE :-**

Every day an average of 12000 individuals dies due to lack of quality blood. Whereas, one person donating healthy blood can save up to three lives. We call for relatives, blood banks and ask people to help through social media when we are in urgent need of blood.

JEEVANDAN can help people reach out to the donor directly without delay which can further save thousands of lives.

**1.2 SCOPE: -**

JEEVANDAN – is a Blood Bank Management System where users can find a suitable donor according to their required blood group. Without wandering anywhere, the donor's availability will be indicated. People in need can reach out to the donors without delay from external sources such as blood banks , hospitals etc. JEEVANDAN will help patients get blood easily, saving lives. It will help avoid the hassle of hospitals as well as patient’s kin in finding donors. The users can be donors as well as receivers.

The donors can be directly in touch with their receivers, and vice versa, making a healthy and helpful community.

Thus, the scope is not limited to the patients or to donors only, but to all the people who wish to be helped or to help others.

**1.3 DEFINITIONS ACRONYMS AND ABBREVIATIONS :-**

* HTML: Hypertext Markup Language
* CSS: Cascading Style Sheet
* SRS: Software Requirements Specification
* JWT : Json Web token

**DEFINITION :-**

**Blood Bank Management System** : It deals with the collection, maintenance , distribution and easy access of vital blood groups in time of need. It is a collection of individuals, blood banks, or hospitals etc. The donor here registers to donate the blood whereas the receiver will have access to the desired blood groups when required.

**1.4 REFERENCES :-**

[1] N. I. Naim, “ ReactJS: An Open-Source JavaScript library for front-end development ,” Bachelor of Engineering , Dept. Information Technology , Metropolia University of Applied Sciences , 2017. [Accessed: 12-Jan-2023].

[2] O. S. Contributors, “Express.js Documentation” 2010. [Online]. Available: https://expressjs.com/en/guide/routing.html. [Accessed: 27-Jan-2023].

[3]. O. S. Contributors, “Node.js Documentation” 2009. [Online]. Available: <https://nodejs.org/docs/latest-v17.x/api/>. [Accessed: 20-Feb-2023].

[4] MongoDB (2018, Apr. 27) NoSQL Databases Pros and Cons. [online] Available: <https://www.mongodb.com/scale/nosql-databases-pros-and-cons>. [Accessed: 24-Feb-2023].

**1.5 OVERVIEW :-**

This section of the document describes the main characteristics of SRS and its importance. The second section includes a brief description of the functionalities of the project. It describes the hardware and software requirements as well as the user requirements. The third section is a detailed version of the second section. This information will serve as a framework for the current definition and future evolution of the web application.

**2. OVERALL DESCRIPTION**

We through JEEVANDAN plan to render a place for easy access of vital and rare blood groups when required, avoiding the hassle. The patient will be able to get the blood in time by directly contacting the donor through this web application, instead of wandering for resources on different social media platforms as well as hospitals and blood banks.

**2.1 PRODUCT PERSPECTIVE:-**

**2.1.1 SYSTEM INTERFACES:-**

A Laptop / desktop with :

* Minimum 512 Mb RAM
* Single core 2GHz pre-processor.
* Disk space of at least 2 GB required for using Visual Studio code.

(Depending on the IDE and tech stack, the requirements might vary)

**2.1.2 USER INTERFACES:-**

* + The UI will be compatible with any browser such as Chrome , Mozilla , Edge etc.
  + The easy and user-friendly UI will help the user to access the system seamlessly.

**2.1.3 HARDWARE INTERFACES:-**

* Printer may be required if the user wishes to store the information.
* Since the application runs over internet , the network interface is necessary such as Wi-Fi or 3G/4G internet connectivity for better experience
* It is necessary to choose a browser which supports both html and javascript.

**2.1.4 SOFTWARE INTERFACES:** -

* + The data of the project will be maintained in a database (No-SQL ) which is MongoDB.
  + The MERN stack will be used as a tech stack.

**2.1.5 COMMUNICATION INTERFACES: -**

* + We will use the http protocol for communication over the internet.
  + The UI will be displayed in English, for easy use by a variety of users.
  + Internet connection will be required for the working of the web application, broadband is whereas not must.

The system on the other hand will communicate with the users through the following ways:-

* E-mails
* Customer care / Enquiry section.
* Notifications.

**2.1.6 MEMORY CONSTRAINTS:-**

Minimum memory requirements are 512 RAM for the smooth functioning of this web application. This is determined by the languages and technologies used to build this application.   
(This might increase if we change the tech stack to java instead of MERN Stack)

**2.1.7 SITE ADAPTATION REQUIREMENTS**: -

No site adaptation requirements as such . A stable internet connectivity would suffice instead of WIFI or broadband and is the user wants to keep records of the blogs they find useful, a printer might be necessary.

**2.2 PRODUCT FUNCTIONS: -**

The system functions and features will briefly include :

* Registration of user : Login and signup.
* Information entry for donors.
* Search bar to search for donors with the help of blood groups.
* Managing record of donors.
* Availability of donors ( we can donate blood once in every 120 days).
* Feedback about working of the application.

**2.3 USER CHARACTERISTICS: -**

* Users must know how to create their account or login to an existing Gmail account in order to login into the application.
* They must be comfortable with English.
* Users should refrain from false information and fake accounts.

**2.4 CONSTRAINTS:-**

* **Technology constraints**: The website has to be responsive so as to work exactly the same on different devices without lacking any feature i.e. should not be device specific.
* **Security constraints**: The website must comply with security protocols and standards to protect user data and ensure the right use of the resources provided.
* **Regulatory constraints**: The website must comply with relevant laws and regulations governing medical actions**.** Must follow the guidelines laid down by the government for blood donation in the country.
* **Resource constraints**: The website must be designed to work within the available resources, such as the database according to the geographical locations, limited number of users and so on**.**

**2.5 ASSUMPTIONS AND DEPENDENCIES:-**

This project is being developed for helping others so we assume the users will take the responsibility seriously and not provide wrong or fake information to keep the environment and community healthy.

We assume that the system will be able to render help properly while following the guidelines of the government regarding the blood donation activities.

This web application will only be able to provide information of the source of the blood needed and not be helpful in the extraction and distribution.

**Dependencies :-**

* System needs to be compatible with the existing hardware and software used in blood banks and hospitals for smooth working.
* It must be integrated with the existing information available in any blood banks or hospitals to increase its reach among people.

**3. Specific Requirements**:

**3.1 External Requirements**

**Hardware requirements :**

* Minimum 512 Mb RAM
* Single core 2GHz preprocessor.
* Disk space of at least 2 GB required for using Visual Studio code.
* Browser to support both HTML and JavaScript.

**Software Requirements :**

* Operating System compatible with the latest browsers (supporting Java  
  Script , bootstrap etc).
* MongoDB as a No-SQL Database.
* JavaScript libraries such as React.js.
* Express.js as a middleware for node.js (a node.js framework).

**3.2 Functional Requirements**

The functional requirements may include:

* **User Registration / Login**: The website shall allow users to create accounts by providing their name, email address, and contact number or login to an existing account on the website and an id for verification of user.
* **Donate Blood :** The website shall allow users to register themselves as an available donor.
* **Receive Blood :**  The website shall allow users to request for blood by registering themselves as an available receiver.
* **Get information about blood Camps :** The website shall allow users to find the upcoming blood donation camps.

**3.3 Performance Requirement**

The performance requirements may include:

* **Response time:** The memory store system should have a fast response time
* **Scalability:** The application should be able to cope with an increasing number of users.
* **Optimization:** The website should be optimized for fast load times and performance.
* **Monitoring:** The memory store system should be monitored for performance and availability using tools such as performance analytics.

**3.4 Logical Database Requirements**

The logical database requirements for a memory store website might include:

* Data Modeling: The database is designed using appropriate data modeling techniques, such as key value based document databases.
* User Profiles: The database should store user profiles, including user information, available donor and recipient information.
* Database Optimization: The database is optimized for fast data retrieval and minimal latency.
* Database Security: The database is protected against unauthorized access.
* Database Scalability: The database should be scalable to handle increasing amounts of user data and traffic.

**3.5 Software System Attributes**

* Reliability: The website should be reliable and operate as expected under different conditions, such as heavy user traffic, hardware failure, or network disruptions.
* Availability: The website should be available to users 24/7, with minimal downtime or maintenance interruptions.
* Maintainability: The website should be designed to be easily maintainable, with clear and well-documented code, easy debugging, and updates to support new features or changes.
* Usability: The website should be designed to be user-friendly and easy to use, with intuitive navigation, clear instructions, and responsive design for different devices.
* Security: The website should be designed with security in mind, with secure authentication, encryption, and protection of user data.
* Compatibility: The website should be compatible with different devices, web browsers, and operating systems, ensuring that all users can access the website.

**3.6 Organizing the specific requirements**:

**3.6.1 Objects :** Objects refer to the entities, components, or resources that the software system interacts with or manipulates. Here are some objects that could be included:

* User: A user is an individual who interacts with the website as a donor or recipient and manages their account information.
* Donor information : This stores the information about all the available donors.
* Recipient information : This stores information about all the needy recipients.
* User account: The user account object represents a user's account information, including personal details, login credentials, and history.

**3.6.2 Features :** The main features of online tiffin service application include:

* User registration and login: Users can create an account and log in to access their profile, order history, and saved payment information.
* Information entry for donors : Users need to fill their essential health information in order to become an eligible donor.
* Search : Users can login and search for the donors with the help of their required blood groups.
* Managing record : Keeping the record of the users registered as donors, in order to estimate the scarcity and abundance of blood groups.
* Availability : We must check if donor is available to donate blood ( we can donate blood once in every 120 days). If the user has donated blood in the last 120 days, they will not be shown as potential sources for the time being.
* Feedback about working of the application : Users can post their queries and feedbacks in the mail provided so that we can check the working of the system accordingly.