

# Literature Survey

## Plasma Donor Application

### **Abstract:**

High risk of mass death among the population when the world is ravaged by a deadly disease Worldwide. These diseases don't give surgeons enough time to research and find drugs Therefore, there is a need to find rapid treatments to reduce mass mortality from such diseases. One of the best and very effective ways is to donate plasma from cured people an individual becomes ill. This could potentially cure the disease in infected people. Plasma Donating is one of the best ways to heal people in recent years Global pandemic, is COVID-19. Recovery rates for these deaths were high It eventually went up because no drug was found anywhere in the world. Another problem is Infected patients were very concerned as cured patients came forward to donate their plasma Because I can't find anyone to help them. Therefore, we need an application that saves donor's details, tracking, and notification upon patient request.

### **Introduction:**

Donating plasma, also known as apheresis, can help save lives. This is a relatively safe procedure. but there may be minor side effects. Plasma is the liquid part of blood. It contains protein and antibodies that are important for blood clotting and immunity. About 55% of blood is plasma. Plasma donation involves drawing blood, extracting plasma, and returning what is left of your blood for people, all the way through a single needle still in the transparent arm treatment. Plasma is in high demand as it helps to treat cancer and other health problems. In May 2020, the Food and Drug Administration (FDA) asked people who have recovered from COVID- 19 to donate plasma. Experts believe that plasma may contain antibodies to SARS-CoV- 2, the virus behind the disease. Receiving plasma with these antibodies can help a person against infection. People with blood type AB have a universal plasma type, which means that a person of any blood type can safely receive this plasma. This is different from having a universal blood group, which is O negative. American Red Cross appeals to people with AB blood for plasma donation. A

person can do it every 28 days, or up to 13 times a year. Research shows plasma donation is safe and the National Institutes of Health (NIH) emphasizes that there is no risk of bad blood recovery. In addition, the FDA and the Medical authorities regulate plasma donation equipment and procedures. However, a plasma donor may experience minor and similar side effects. Any other intervention involving a puncture carries certain risks. Therefore, creating an application to maintain sponsors is extremely necessary and equally important. Lists and details to contact and track them in emergency situations. When we talk about an application, it should be easy to handle and user-friendly. Software like Python-Flask and Docker is used in this application.

## **Realtime Software:**

**FLASK:** There is a recent shift in the development of cross-platform languages and frames. By most standards, a vase is a small frame, small enough to be called a "micro-frame". It's small enough that once you get used to it, you can read and understand all of its source code. But small doesn't mean it does less than other frames. The vase is designed as a frame that can be extended from the top at the top; it provides a solid core with basic services, while the extension provides the rest. Because you can choose any expansion pack you want, in the end, you will have a neat stack without bulging and does exactly what you need. Flask has two main dependencies. Routing, Debugging, and Web Server Gateway Interface (WSGI) subsystems come from Werkzeug, while template support is provided by Jinja2. Werkzeug and Jinja2 are the authors and the main developer of Flask. There is no native support in Flask for database access, web forms authentication, user authentication, or other high-level tasks. These and the key services most web applications need are available through extensions that integrate with the basic package. As a developer, you have the right to choose extensions that work best for your project or even write your own if you feel like it. This is the opposite with a larger frame where most of the selections are already done for you and hard or sometimes cannot be changed.

**DOKER & KUBERNETS:** Docker is an open-source tool that automates deployment applications in containers. It was written by the team of Docker, Inc (formerly dot Cloud Inc, an original player in the Platform as a Service (PAAS) market, and published by them under the name Apache 2.0 License. Docker adds a virtualization-based application

deployment tool container runtime environment. It is designed to provide a light and fast environment to run your code and an efficient workflow to get it from your laptop to your test environment and then to production. Docker is extremely simple. Indeed, you can get started with Docker on a minimal server running nothing but a Linux kernel and a Docker binary.

Kubernetes, or k8s for short, is open-source container orchestration. Originally developed by Google engineers, Kubernetes solves many problems at runtime microservices architecture in production. Kubernetes automatically handles scaling, self-healing, load balancing, rolling updates, and other tasks previously performed manually by DevOps Engineer. Because Kubernetes is open source and managed by Cloud Native Computing Foundation in 2014, the development community has taken advantage of its benefits to orchestrate container-based systems. This software gives the application an executable structure and supports all application features.

## **Cloud base & Registries:**

The term "cloud computing" refers to an architecture that enables simple, on-demand network access to a shared pool of reconfigurable computing resources that can be quickly provided and released with little management work or service provider involvement. Cloud creates equipment. Resources are easily accessible and quick to configure, reducing the amount of time needed to demonstrate a functional version of their products, and developers. Cloud also permits the reuse of the using the same resources for a series of related tasks at once is more economical.

An open cloud computing platform called IBM Cloud combines platform as a service (PaaS) and infrastructure as a service (IaaS) and offers a variety of cloud services that can be used to quickly develop and deploy infrastructure or business applications. It is a PaaS that gives programmers access to IBM's integration, security, transactions, and other software important features, as well as software from IBM Business Partners. Various application types are possible. The Internet of Things is a combination of the web, mobile, big data, and smart gadgets. It enables as an IaaS giving developers precise control over the infrastructure that hosts their apps.

In IBM Cloud data center locations across the world, developers can deploy high-performance bare-metal servers, virtual servers, containers, and cloud storage.

With its widespread presence and adaptable resilience options, IBM Cloud Object Storage supports our cloud-native workloads' exponential data expansion while providing best-in-class cost optimization, strong data security, and simple data governance. Additionally, it is simple to monitor and manage our essential workloads thanks to built-in data lifecycle processes. In order to assist clients with hybrid cloud data migrations and modernization, IBM COS provides a wide range of services as well as integrations throughout the larger IBM portfolio.

This trustworthy database, IBM Db2, offers low latency, high availability, and elastic scalability for data-intensive apps and services. Accessible to everyone, everywhere, the database is simple to set up, develop, and run on.

You may store and share Docker images in a controlled, private registry using IBM Container Registry. Container images are kept and distributed in a completely controlled private registry. To easily execute private images on the IBM Cloud Kubernetes Service and other runtime environments, push them. Security concerns are examined in images so that deployment decisions may be made with ease. These cloud storage options assist in keeping the data that is easily accessible in the program.

## **Web Design:**

In essence, a web app is a website that has been modified to be used on a smartphone. The website's content is unimportant; it might be anything from a normal small business brochure website to a mortgage calculator to a daily calorie tracker. The user interface (UI) of a web app is created using web standard technologies, it may be accessed via a URL (public, private, or possibly behind a login), and it is tailored to the features of a mobile device. A web app is not a Java application, it is not downloaded to the phone, and it is not found in the Android Market.

When accessing the internet, the pages you are viewing are only text documents that are stored on someone person's computer. In a standard web page, the text is enclosed in HTML tags, which inform our browser of the document's structure. With this knowledge, the browser can choose how to show the data in a logical manner.

The browsers display specific HTML elements in different ways (headings are rendered large and bold, paragraphs are followed by a blank line, etc.). These extremely simple styles serve mainly to aid the reader in comprehending the purpose and organization of the content. Cascading Style Sheets are used to extend this straightforward structure-based presentation (CSS). The visual presentation of an HTML document is defined using the stylesheet language CSS. Simple things like text size, color, and style (bold, italic, etc.) as well as more advanced things like gradients, opacity, and page layout may all be defined using CSS.

An HTML page can be enhanced with JavaScript, a scripting language, to make it more interactive and user-friendly. For instance, we could create some JavaScript that checks the validity of the values entered into a form. Alternatively, we could use JavaScript to make certain website elements visible or invisible based on the user's clicks. Even without refreshing the current web page, JavaScript can communicate with the webserver to carry out database updates. The online view of the Plasma Donor Application was designed with the aid of all these scripts and codes.

### **Awareness for Plasma Donation:**

People should volunteer to donate their blood plasma during pandemics in order to stop the disease's spread and provide the treatment they have already received. Our app will include educational videos and articles as well as prizes for both new and recurring donors. All of these humanitarian gestures should be done on a regular basis to help society and preserve social well-being. Plasma donation during the previous Covid-19 Pandemic is mentioned on numerous occasions.

One such instance is the first Covid-19 plasma donor from India sharing her experience and urging other patients to follow suit. After their congregation ignited dozens of Covid-19 clusters throughout the nation, members of an Indian Islamic group have offered to donate blood for plasma therapy.

## References:

All of these articles are mentioned in our application to promote plasma donation.

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