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## **MINI PROJECT SYNOPSIS**

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### **PROJECT TOPIC: Blood Plasma Donation Application**

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### **The Problem Statement:**

In the present scenario it is very important to provide people with a medium that aims to provide healthcare facilities. Searching for blood or plasma currently involves blood banks, but it is a time consuming process and also requires manual involvements of the hospital staff to search for the right blood group. In the times of sudden requirements, due to any accident or illness people often feel panic and in deep stress to find the blood of particular type for the patient. Sometimes due to lack of availability the patient might lose his or her life. Therefore, it is important to give a platform where this process could be done with ease. In this time, our country is also witnessing a global pandemic caused by covid19 virus, which is infecting people in good numbers. Therefore, it's very important to develop a platform that works for this purpose and helps the person in need.

### **Reason for selecting the topic:**

The Blood Plasma donation system is the android based project that aims to provide a platform where the willing blood donors, who want to serve for the betterment of people, will be available. All the information regarding them i.e., their blood type, their place is provided. We all witness such situations in real life whether in our own family or others. Misfortunes can happen anytime to anyone, we see people searching for blood when we visit hospital. The need for the availability of the specific blood in less time is very important in accidents, sudden attacks and other types of critical situations.

Hospitals may have blood banks but sometimes there is unavailability of the same blood type. People then contact their closed ones but sometimes due to unavailability of blood in proper time the patient may lose his/her valuable life. Therefore, our system will ensure that not only you rely on your closed ones but also on other people who are available and can provide help. The main reason for selection of this topic is to think about the welfare of the society as we carry the responsibility to serve our nation. In the situations where the country has shut down due to this pandemic situation, where hospitals only have patients who are infected by the virus, it's a matter of concern. While staying indoors people can help others and the needy can get the benefit. Our intention is to motivate people to contribute their part in the tuff times and help the society. As our country is driving towards being digital, it's important to use the digital platform for the wellness of the society. Thus our project manages to connect the blood donors to the patients so as to make the donation process easy.

### **Objective:**

The project is mainly centered towards the people of society who are willing to donate blood or plasma to the patients that are in need so as to help them recover .Through this system it will be easier to find a donor for the exact blood type and it's easy to build the connection between donor and the patient . The main intention behind this system is to formalize the procedure of blood donation and motivate other donors in order to play their role in the welfare of the society. At the situations when the sudden tragedy takes place and it's important to aid the patient in no time. Searching for blood in blood banks and other centers is a tedious task. As we all know our country is

facing very challenges at present due to covid-19 and thus it's a need of the hour to think about all the possible ways to help the society. Not only the present conditions that are driving us to think rationally but every now and then thousands of people need blood due to accidents, severe illness etc.

The system helps the needy to search for various donors available and request them to help by contacting them. Through this digital medium it is easy to connect different donors which lead to saving time and ultimately the lives of people.

At this time social distancing and other precautions are taken seriously, therefore while staying indoors it's not easy to seek help. To find the specific blood type, availability of the donor at a nearby place to the patient is the motive of this application. We therefore tried our best to connect each thread together to provide better healthcare facilities and also to contribute our part in the wellness of the society.

### **Future Scope:**

Resolving some issues are important for the welfare of society and this must be done with some responsible hands. Blood is the **Honeydew** to the human's body. So, the need for it never dies and in which and what situations anyone wants, it must be available to everyone.

This idea could save millions of lives and finding the right donor and right blood group is tough but our idea has the potential to minimize the same problem. In addition to that in this current pandemic situation the recovered patient could also donate the plasma to help the infected people so that they can be cured of the infection by their antibodies.

### **Literature and survey:**

We have observed many real life challenges faced by the people in our surroundings. During these situations where people are staying indoors, taking precautions, following government guidelines it's difficult to meet people and it's hard to efficiently seek help. When some sudden tragedies take place or any misfortune happens, the patient requires blood in a very less time to help his/her recover. Therefore when we proposed this idea and took the survey in the nearby surroundings the result was positive from the different age's group people.

### **Methodology:**

#### ***Waterfall Model:-***

Methodology used while developing the whole project is **Waterfall Model**.

The **waterfall Model** is a linear sequential flow. In which progress is seen as flowing steadily downwards (like a waterfall) through the phases of software implementation. This means that any phase in the development process begins only if the previous phase is complete. The waterfall approach does not define the process to go back to the previous phase to handle changes in requirement. The waterfall approach is the earliest approach that was used for software development.

### Tools required:

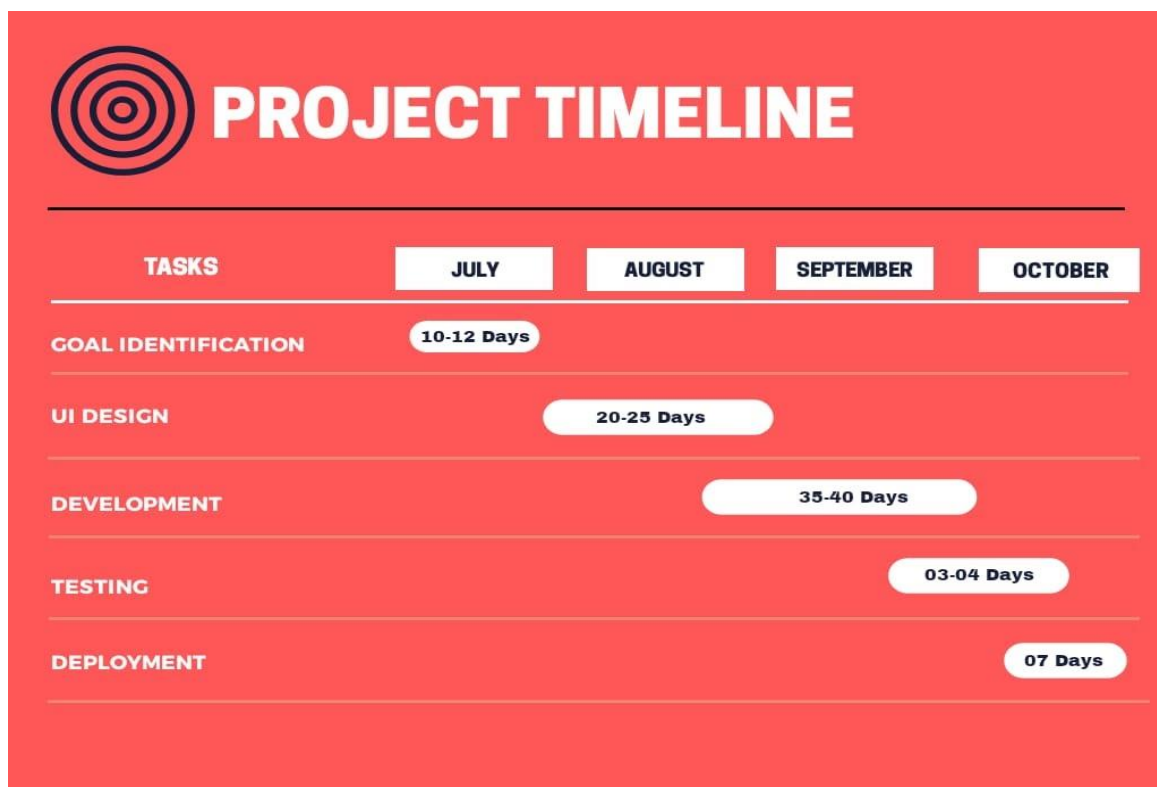
- **Hardware Requirements:**

- **For Development:** A personal computer for developing the project with a minimum i5 core processor or AMD's Ryzen processor would be fine and 8 GB of RAM.
- **For testing purpose:** Smart phones built on Android OS or Virtual Device like Android Emulator on IDE itself, **JUnit** is a **unit testing framework for the Java programming language**.

- **Software Requirements:** An Integrated Development Environment (IDE) i.e., Android Studio to develop the project, Java Development kit (Jdk13), Android SDK and NDK with minimum 21 of API level, Cloud Services like Google Cloud Platform (GCP) (Google's Firebase to support the Backend services) and BAAS(Backend as a service).

**Project Planning:** Project is completed in the following modules.

- **Goal Identification:** What and which type of factors should be involved in resolving the issues.
- **UI Design:** Designing the User Interface of the whole project.
- **Development:** The Development phase is the core part of the project to take shape.
- **Testing:** User Experience must be good in order to accomplish the goal with least or no faults or bugs.
- **Deployment:** Majorly distribution of the project plays an important role.



### **Contribution of our project:**

Blood donation is required during an organ transplant, accidents, cancer treatment, etc and even in this pandemic period plasma requirements are also very high. For blood or plasma donation, one needs to check for a donation camp or visit a blood bank. The Manual donation system has many disadvantages which includes, it is too time consuming, often leads to error prone results, consumes lot of manpower, lacks donor information, retrieval of data takes a lot of time, percentage of accuracy is less.

In the time of emergency, it becomes difficult to approach the right donor. Rare blood groups are not available all the time at all blood banks and recipients find difficulties to track the right donor. To overcome this problem, we have proposed this system. There are many blood donation management systems, but these systems only maintain the information of blood banks and donors. But our project has proposed a system which not only maintains the information of blood banks, but also maintains information of blood camps which makes the blood transfusion process easier. This Blood and Plasma donation management system maintains the list of blood donors and also helps the recipients to track and search the right donor easily.

It has two modules namely Admin and User. Admin can add hospitals having blood banks and can also add various blood donation camps. He/she can also view the list of donors of a particular area with a proper Blood cross match. He/she can also check for blood or plasma requests and in case of emergency he/she can send notifications to donors as per the requirements. Users can register and make a request. Users can also register as a donor. Donors can check for Blood camps and hospitals for blood donation and will be getting notifications in case of emergency. They can either accept or ignore it. This project aims at maintaining all information regarding blood donors, different blood groups available in blood banks as well as blood camps and helps them to manage in a better way.

- **Use Case:** The system comprises of 3 major modules with their sub-modules as follows:

#### **1. Admin:**

- Add hospital: Admin can add hospitals and blood donation camps.
- View list: Admin can view the list of camps and hospitals
- View donors (filter by area & blood group)
- Check Request
- Send notification as per requirements

#### **2. User:**

- Register
- Create Blood Request
- Register as Donor
- View Camps / Hospital
- View Blood Request (accepts/deny)

### **Scope for Extension into Major Project:**

If we will extend our project into a major one then we can add the data of doctors and patients. Then patients can also apply for the appointments with the doctor available on the system. So, then they will not need to stand in a long queue at the hospitals for taking appointments. Taking in consideration of the pandemic visiting the hospitals for long duration could be unsafe through this system; patients will directly reach the hospital at their appointed time and can directly meet the doctor, so the risk of infection would be lower. They can also consult with the doctors from their homes only and the doctors will suggest the best possible treatment at that point of time and hence, this will also help in controlling the day-by-day rising crowd at the hospitals.

### **Conclusion:**

The main purpose of our Blood and Plasma Donation App is to provide blood and plasma to the recipients easily. In case of emergency, if the blood group is rare, he/she can find a certain blood group donor on our platform. Donors can also donate blood easily by checking the list of blood donation camps from there.