Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	16 October 2022
Team ID	PNT2022TMID12996
Project Name	Project – Plasma Donor Application
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

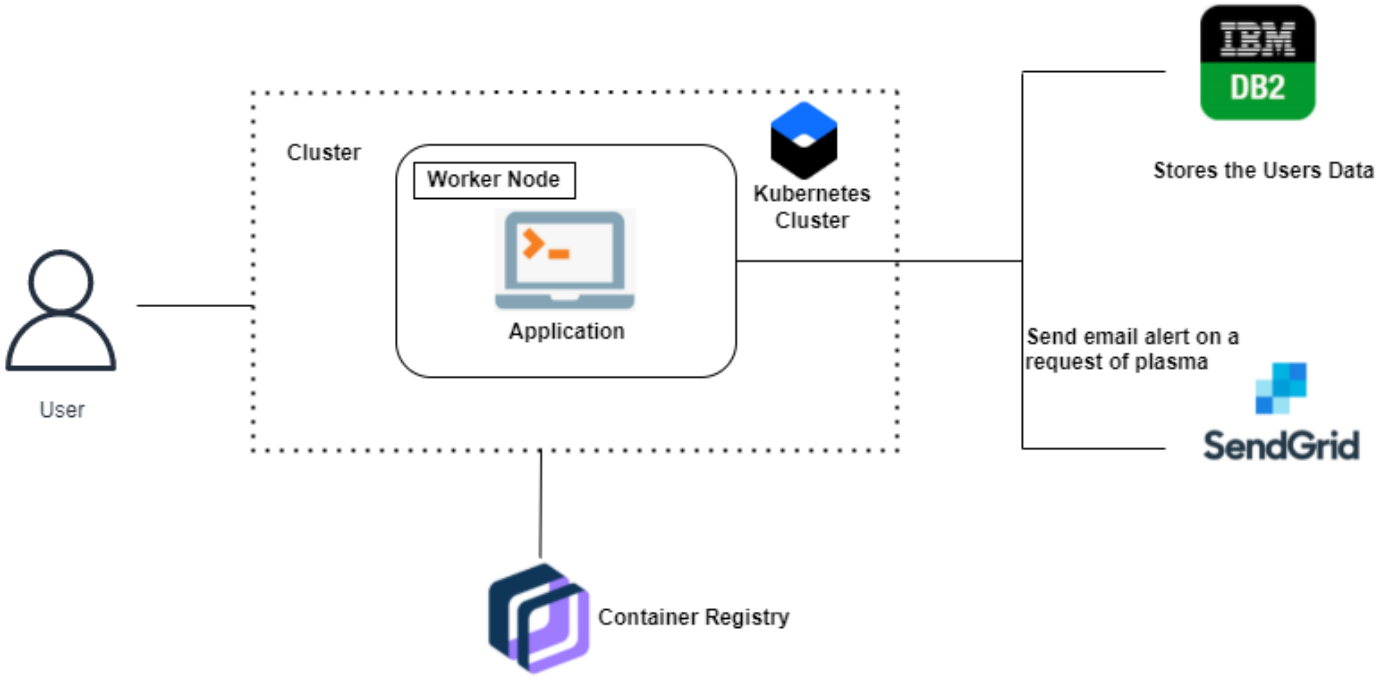

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User is presented with a website to interact with the platform, register, login, and place requests for plasma	HTML, CSS, JavaScript
2.	Application Logic-1	Login, Register as a patient or donor to the application	IBM DB2
3.	Application Logic-2	Search for donors by entering details of plasma required	IBM DB2
4.	Application Logic-3	Chatbot to help educate the users and navigate through the platform	IBM Watson Assistant
5.	Database	Used for data appending and retrieval from backend server by users	MySQL
6.	Cloud Database	Database Service on Cloud to store details about patients, donors, and history of requests and donations made	IBM DB2
7.	External API-1	SendGrid is used to notify the donors if users have made requests for their specific plasma or compatible plasma	SendGrid
8.	Infrastructure (Server / Cloud)	Deployed on container registry after containerizing image	Docker, Kubernetes, IBM Container Registry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Flask framework of python is used to build the web application. Kubernetes is used to containerize the application, deploy and maintain it.	Flask, Kubernetes
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	Transport layer security, IBM Object Storage
3.	Scalable Architecture	A 3-tier architecture is used, with different layers for the database, logic and presentation	Docker
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Kubernetes
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Docker