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

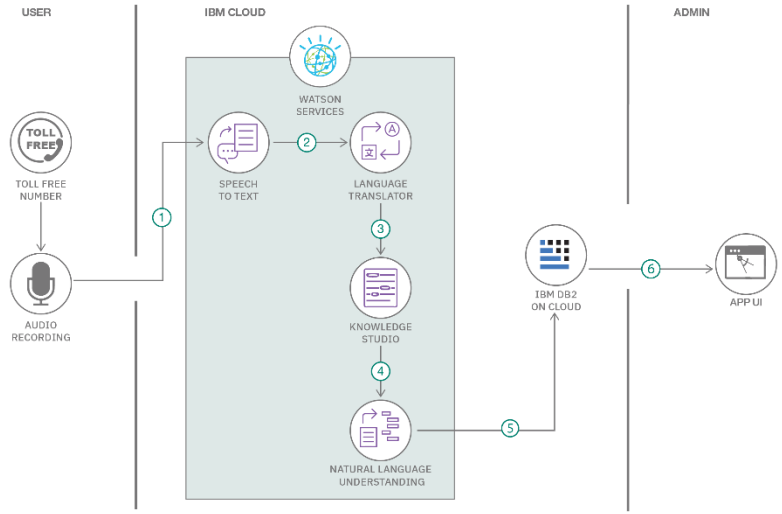
Date	03 October 2022
Team ID	PNT2022TMID25505
Project Name	Plasma Donor Application
Maximum Marks	4 Marks

Technical Architecture:

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

Example: Order processing during pandemics for offline mode

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Architecture Diagram

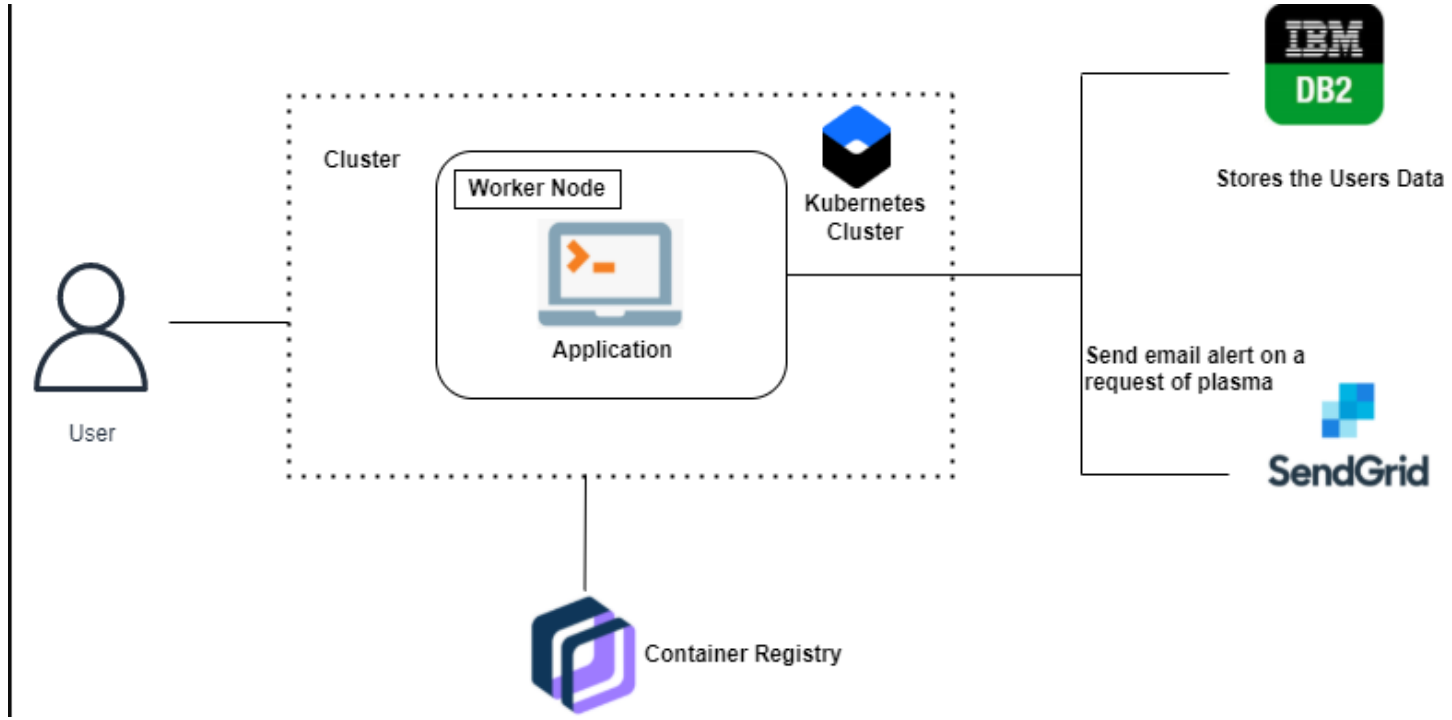


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript ,Python Flask
2.		Logic for a process in the application	Python
3.	Making the Plasma request	The recipient will enter their details in the request form including the required plasma type, location etc. The request will be verified and added to request queue	python,Javascript,html.
4.	Donors accepting the request and making donation appointment	Once the donor notified about the request and the if donor wiling to donate their plasma, they can easily accept the request and make a appointment with the recipient	SendGrid-EmallAPI,,python,html,javascript
5.	Database	User profiles along with password will be maintained in separate table with in single database. The separate database will be used to store the donor's information and maintaining the current request and track the transactions.	MySQL.
6.	Cloud Database	Database Service on Cloud	IBM DB2.
7.	Containerization	Containerizing the entire application with the help of docker and register in the container registry	Docker
8.	Chatbox	Used to clarify user queris	IBM Watson Assistant
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System, Cloud Server Configuration :	Local,Kubernetes.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Python Flask Is an open source framework used to develop the application	Python-Flask
2.	Security Implementations	ReCAPTCHA will be used to prevevent the systems from bot Encryption is used to protect the user data.	recapctha SHA-256,python cryptography library, Cloud Fare
3.	Scalable Architecture	Three tier architecture which seperates applications into three they are Presentation tier,Application tier and Data tier.Each tiers can run on a separate operating system and server.	IBMDB2
4.	Availability	By using backup load balancer it promotes high availability to take over it the primary one fails temporarily	IBM Load Balancer
5.	Performance	By using Kubernetes cluster lets you manage the resources that you need to quickly deploy,update scale applications and application can also handle multiple requests per second.	IBM Kubernetes Cluster