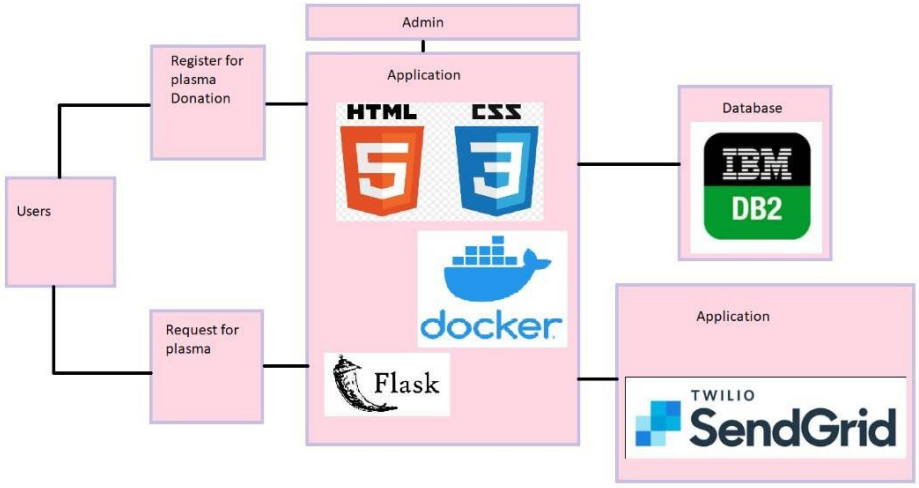
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID16285
Project Name	Project - PLASMA DONOR APPLICATION
Maximum Marks	4 Marks

Technical Architecture:



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)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Framework used for designing the application.	Python - flask
3.	Application Logic-2	Communication between users and the application via mails	SendGrid
4.	Application Logic-3	Docker is an open source platform for building, deploying, and managing containerized applications.	Docker
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	They make it easier for your developers to store, manage and deploy container images.	Container Registry
9.	External API-2	User data verification system to verify if they have any medical records and is healthy to donate plasma	checking database API
10.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: will be linked to IBM cloud with port forwarding available network Cloud Server Configuration: IBM cloud to host the local server	Local, Cloud Foundry, Kubernetes, etc.

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	Container registry and Kubernetes Cluster are used for encryption of data.	Container registry and Kubernetes Cluster
3.	Scalable Architecture	Kubernetes Cluster, it makes containers to run across multiple machines and environments. Which also prevents downtimes do to hardware problems	Kubernetes Cluster
4.	Availability	Kubernetes Cluster provides all time availability. Additionally using Cloudflare networks to reduce DDOS attacks	Kubernetes and Cloudflare
5.	Performance	Docker improves the application performance	Docker

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d