TECHNOLOGICAL STACK

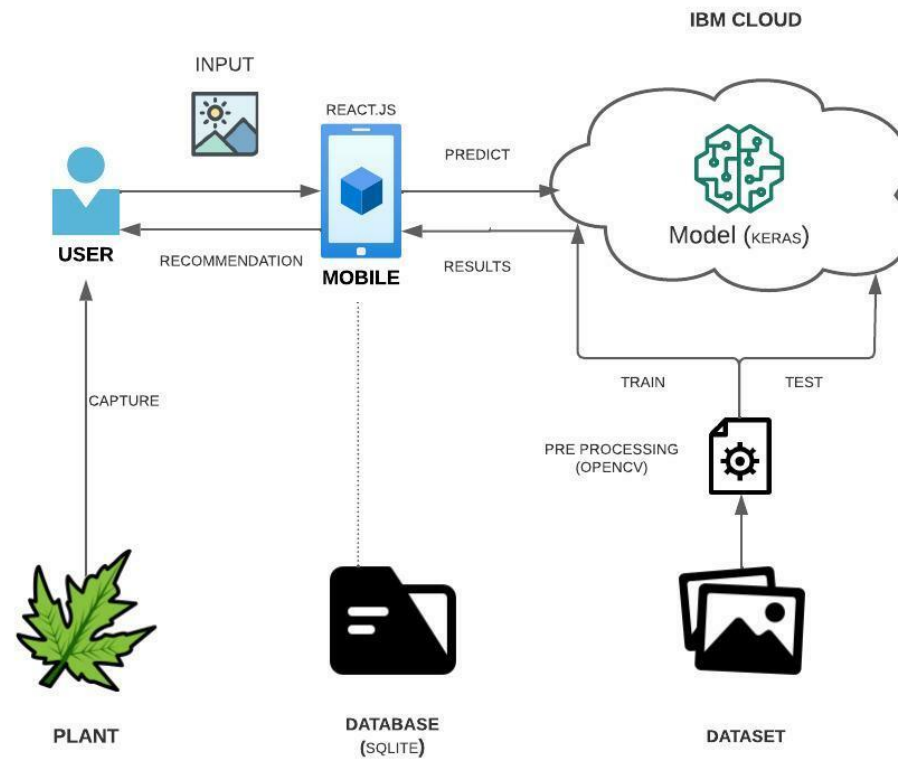**DIAGRAM:**

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.	Front-end React js Backend - Flask
2.	Plant disease prediction	Classifying the plan the disease for the corresponding image	Tensorflow
3.	Fertilizer Recommendation	Recommendation for the corresponding disease	Pandas, Flask
4.	Database	Storing user information	SQLite
5.	Cloud Storage	Service on Cloud to Store model	IBM Watson
6.	File Storage	File storage requirements to store dataset	IBM Block Storage or Other Storage Service or Local Filesystem
7.	External API-1	API to get disease prediction and corresponding fertilizer recommendation for the input image	Flask Rest API
8.	Machine Learning Model	CNN to predict plant disease based on the image provided by the user.	CNN Model
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	There are a lot of open source frameworks used in this project starting from application to the DNN models.	Flask, React.js, Tensorflow, Pandas, OpenCV
2.	Security Implementations	There are security protocols implemented along with every API requests in the form of JWT	JWT, AES
3.	Scalable Architecture	Since the servers are implemented as microservices they can be scaled up using kubernetes	Kubernetes

S.No	Characteristics	Description	Technology
4.	Availability	IBM cloud server can be setup in various geographic zones based and users	IBM Cloud