Basic Details of the Team and Problem Statement

Ministry/Organization Name/Student Innovation : **Ministry Of AYUSH**

PS Code : **SIH1343**

Problem Statement Title : **Identification of different Medicinal plants/Raw materials through Image Processing using Machine Learning Algorithms**

Team Name : **CodeXccelrate**

Team Leader Name : **Shubham Tiwari**

Institute Code (AISHE) : **C-33758**

Institute Name : **LOKMANYA TILAK COLLEGE OF ENGINEERING, KOPARKHAIRANE, NAVI MUMBAI, MAHARASHTRA**
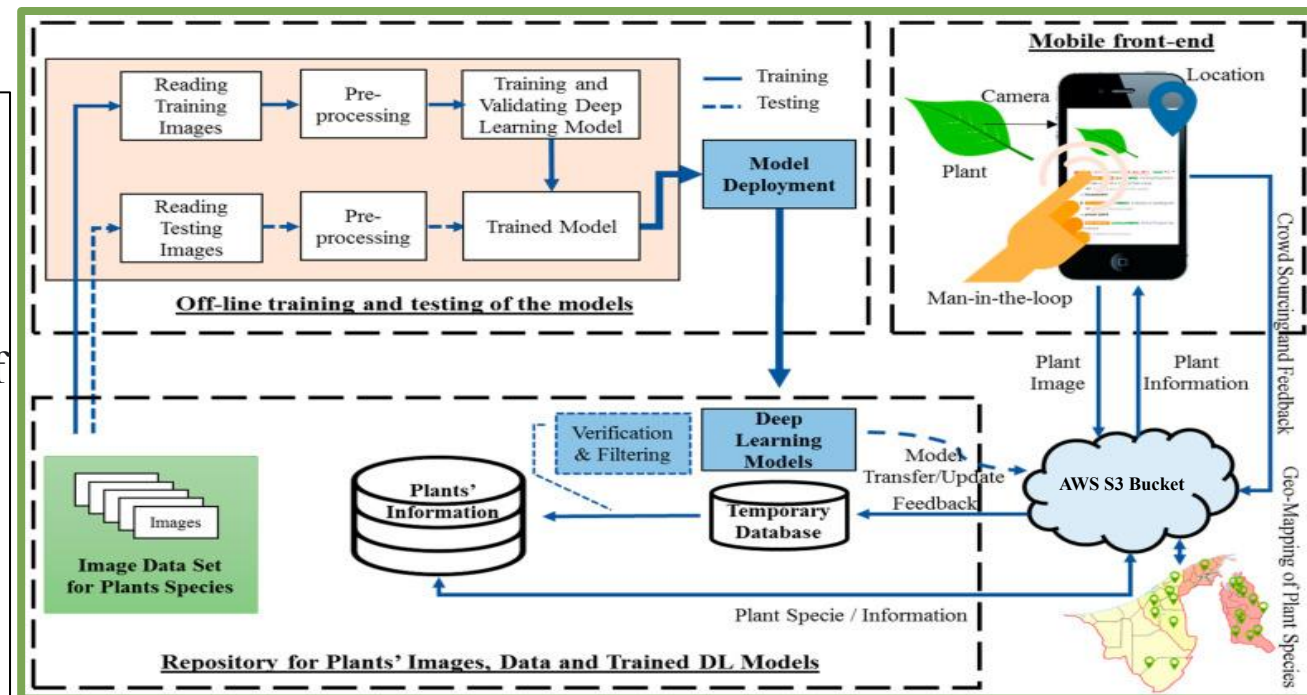
Theme Name : **MedTech/BioTech/HealthTech**
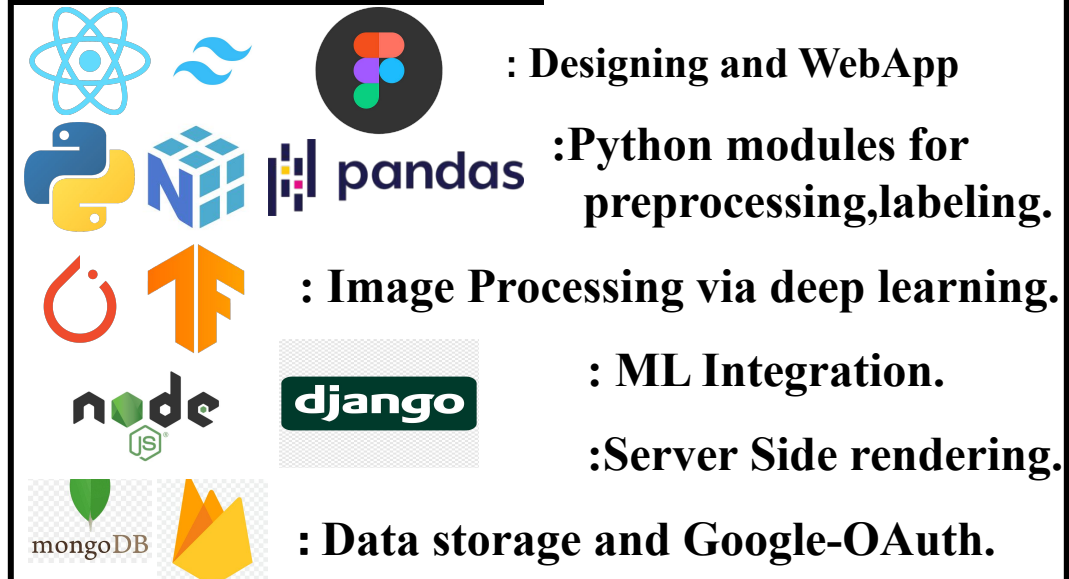
Idea/Approach Details:

- Idea is to provide a platform where User will be able to find **information about plant**, where they **grow**, and check if the plants are **endangered** for **ethical sourcing** and **medicinal purposes.**
- **Why is it Different?** - Our platform provides **various uses** of the **identified plant/raw material**, **History** and also **habitat** of that particular identified plant.
- Users can easily upload the images through **Web interface** and passed on for **Identification** and fetching the information about the plant.
- **API-driven** plant detection provides comprehensive information, conservation status, and locations through an interactive **G-maps API** via **S3 bucket cloud** platform.

Product Status:

40% product building is completed and further build is on progress. Testing and Validations steps are next to be undergone.

TECHNOLOGY STACK:

 : Designing and WebApp

 : Python modules for preprocessing, labeling.

 : Image Processing via deep learning.

: ML Integration.

 : Server Side rendering.

 : Data storage and Google-OAuth.

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Use cases :

- **Pharmacists/ Herbalists:** Enhancing product quality and safety and resources of medicinal raw materials for Ayurveda and other Medicinal Purposes.
- **Agriculture and Farming:** Farmers can optimize the crop planning for **endangered plant species** and sustainable agriculture.
- **Conservation Efforts** : **Monitoring** and **protecting** endangered plants species.
- **Education and Awareness :** Fostering knowledge and conservation awareness to individuals having interests in the field of **Reasearch** and practicing the **Medicine.**
- **Government Regulation:** Consumers can verify the authenticity of **herbal products** by using the **software** to identify the plants listed on **product labels**.
- **Wild Harvesting Management:** Organizations engaged in wild **plant harvesting** for commercial purposes can monitor and manage their plants.

Dependencies:

- **API Integration :** Integration with **external APIs** for real-time geographical data and to fetch the features of plants.
- **Temporary Data Storage :** Utilization of **AWS S3 bucket** for temporary storage of data during various stages of processing and user interactions.
- **Database Management :** Utilization of **Firebase** and **MongoDB** for storing and retrieving plant-related information and user profiles.

Show stopper:

- **Geographical Mapping :** Implementing accurate geographical mapping for medicinal plant locations on the website .
- **Cloud Hosting :** Utilizing AWS for hosting provides the project with scalability and reliability, ensuring it can handle large traffic spikes and user growth effectively.
- **Cross-Platform Compatibility :** Supports multiple platforms (e.g., mobile, web,Android,IOS) enhances **accessibility** and user reach, making the platform **versatile**, **user-friendly** and **responsive**.

Channels: Govt Portals, Industries, Organizations,etc.

Revenue Streams : Service Based Model.

Team Member Details:

Team Leader Name : **Shubham Tiwari**

Branch (Btech/Mtech/PhD etc):   BE   Stream (ECE, CSE etc):CSE   Year (I,II,III,IV):III

Team Member 1 Name : **Pravin Singh**

Branch (Btech/Mtech/PhD etc):   BE   Stream (ECE, CSE etc):CSE   Year (I,II,III,IV):III

Team Member 2 Name : **Ajay Gupta**

Branch (Btech/Mtech/PhD etc):   BE   Stream (ECE, CSE etc):CSE   Year (I,II,III,IV):III

Team Member 3 Name : **Ashutosh Singh**

Branch (Btech/Mtech/PhD etc):   BE   Stream (ECE, CSE etc):CSE   Year (I,II,III,IV):II

Team Member 4 Name : **Ragini Kaushal Kishor**

Branch (Btech/Mtech/PhD etc):   BE   Stream (ECE, CSE etc):CSE   Year (I,II,III,IV):III

Team Member 5 Name : **Hrugwed Dalvi**

Branch (Btech/Mtech/PhD etc):   BE   Stream (ECE, CSE etc):CSE   Year (I,II,III,IV):III

Team Mentor 1 Name : **Prof. Jayendra Jadhav**

Category (Academic/Industry): Academic   Expertise (AI/ML/Blockchain etc):**AI/ML**   Domain Experience (in years):**10 Years**

Team Mentor 2 Name : **Prof. Rajendra Gawali**

Category (Academic/Industry): Academic   Expertise (AI/ML/Blockchain etc):**AI/ML**   Domain Experience (in years):**10 Years**