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

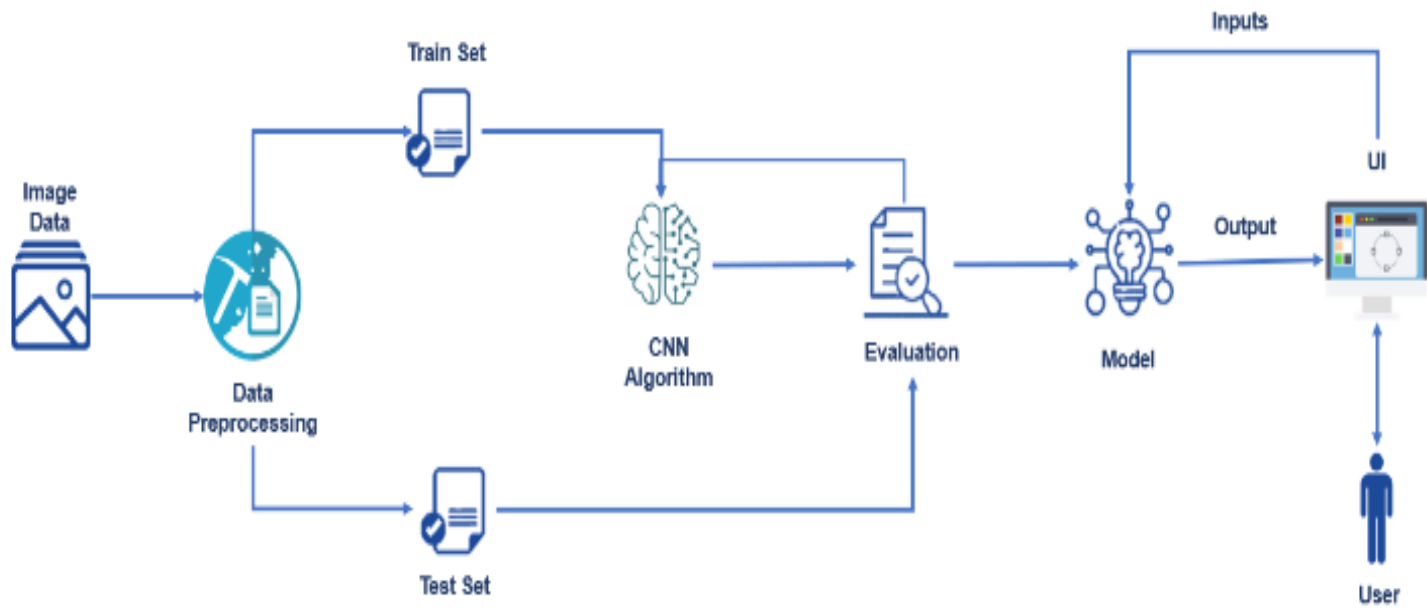| Date	03 October 2022
Team ID	PNT2022TMID14372
Project Name	Project – Digital Naturalist AI Enabled Tool for Biodiversity researcher's
Maximum Marks	4 Marks

Technical Architecture :

Image Data → Data Preprocessing → Train Set → CNN Algorithm → Evaluation → Model → Output → UI ← Inputs

Data Preprocessing → Test Set → Evaluation

User

Table-1: Components & Technologies:

S. No	Component	Description	Technology
1.	**User Interface**	user interacts with application using Web UI.	HTML, CSS, JavaScript
2.	**Application Logic**	Capture or Upload image	Python
3.	**Cloud Database**	Database Service on Cloud	IBM DB2, IBM Cloud-ant etc.
4.	**File Storage**	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
5.	**Deep Learning Model**	Purpose of Deep Learning Model	Image Recognition Model, etc.
6.	**Infrastructure (Server / Cloud)**	Application Deployment on Local System / Cloud Local Server Configuration	Local, Cloud Foundry, IBM Cloud etc.

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	**Open-Source Frameworks**	List the open-source frameworks used	Python Flask, CNN
2.	**Security Implementations**	List all the security / access controls implemented, use of firewalls etc.	e.g., SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	**Scalable Architecture**	Justify the scalability of architecture (3 – tier, Micro-services)	Web server – HTML, CSS, JavaScript
4.	**Availability**	Justify the availability of application (e.g., use of load balancers, distributed servers etc.)	IBM Load Balancer, Image recognition
5.	**Performance**	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	IBM Content Delivery Network