**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

|  |  |
| --- | --- |
| Date | 15 October 2022 |
| Team ID | PNT2022TMID47172 |
| Project Name | Digital Naturalist - AI Enabled Tool for Biodiversity Researchers |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

USER IBM CLOUD USER INTERFACE

Trained model

Output

U

pload

the

image

Pre

-

processing of

Data

Adding CNN Training and

Augmentation

Layers

Testing

model

the image

**Table-1: Components & Technologies:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Component** | **Description** | **Technology** |
| 1. | User Interface | The end user interacts with web application through Web UI | HTML, CSS, JavaScript. |
| 2. | Application Logic | Interpret the input image | Python |
| 3. | Cloud Database | Database Service on Cloud. | IBM DB2, IBM Cloudant. |
| 4. | File Storage | File storage requirements | IBM Block Storage, Local Filesystem. |
| 5. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud Local Server Configuration: | Local, Cloud Foundry, Kubernetes. |

**Table-2: Application Characteristics:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Characteristics** | **Description** | **Technology** |
| 1. | Open-Source Frameworks | The open-source framework used is python flask | Python flask |
| 2. | Security Implementations | MAC access control is used. | e.g. SHA-256, Encryptions, IAM Controls, OWASP etc |
| 3. | Scalable Architecture | 3 – tier architecture | Web Server – HTML, CSS, JavaScript  Application Server – Python  Database Server – IBM DB2 |
| 4. | Availability | Use of Load Balancing to distribute network traffic across servers | IBM Load Balancer |
| 5. | Performance | Design consideration for the performance of the application | IBM Content Delivery Network |