Project Design Phase-
HTechnologyStack ( Architecture&Stack )

| | |
|---|---|
| Date | 15October2022 |
| TeamID | PNT2022TMID38067 |
| ProjectName | Project-DigitalNaturalist-AIEnabledtoolfor BiodiversityResearchers |
| MaximumMarks | 4Marks |

TechnicalArchitecture:

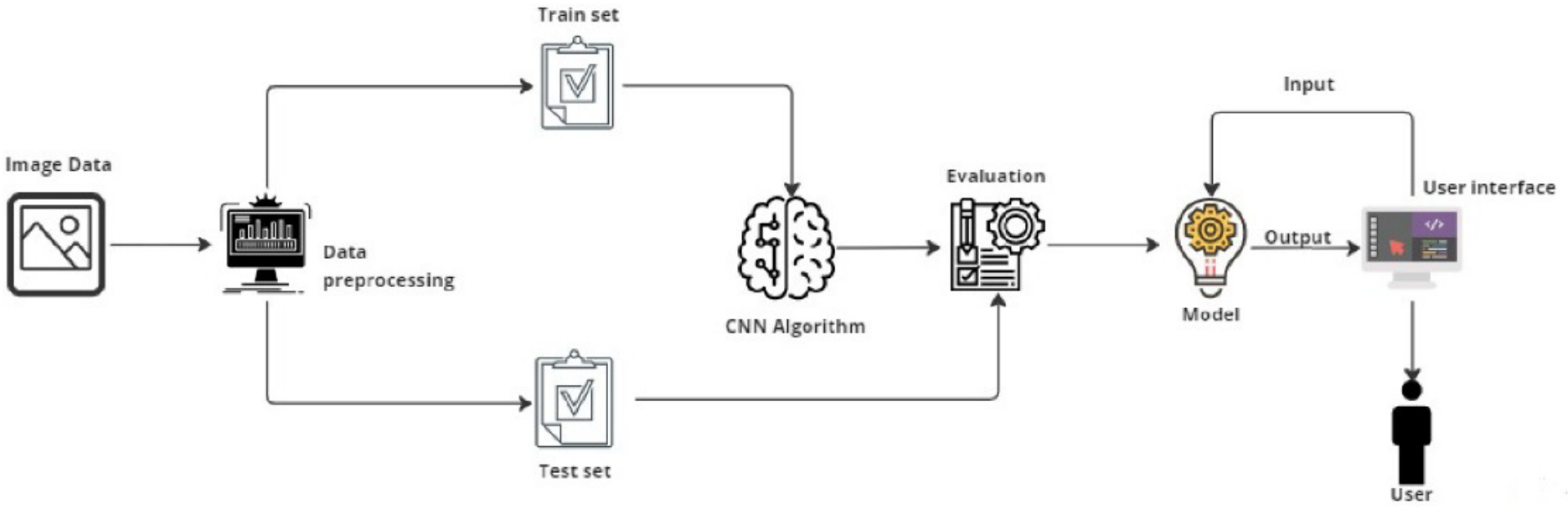

Table-1: Components & Technologies:

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | UserInterface | WebUIorWebsite | HTML, CSS. |
| 2. | ApplicationLogic-1 | Imageupload | PythonFlask. |
| 3. | ImageRecognitionModel | Topredictthespecies ( floraandfauna ) , throughimageprovidedbyt heuser | CNN |
| 4. | Infrastructure ( Server/Cloud ) | ApplicationDelpoyedoncloudserver | IBMCloud |

Table-2: ApplicationCharacteristics:

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-SourceFramework | Opensourceframeworksforpreprocessing, webapplicationandmod eltraining | Keras, PythonFlask, TensorFlow, CNN, sklearnan dmatplotlib |
| 2. | DataPreprocessing | Thesecurity/accesscontrolsareimplemented usingfirewallsetc. | Firewallandothersecurityrelated softwares. |
| 3. | ScalableArchitecture | Justifythescalabilityofarchitecture ( 3-tier, Micro-services ) | Data, models, operateatsize, speed, consistencyan dcomplexity |
| 4. | Availability | Theavailabilityofapplication ( e.g. useofload balancers, distributedserversetc. ) | Imagerecognition. |
| 5. | Performance | Design aspects for the performance of theapplication ( numberofrequestspersecond, useofCache, useof CDN' s ) etc. | FullandeffectivepredictionusingdeeplearningforBio-Diversityresearchers |