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

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|---|---|
| Date | 10 October 2022 |
| Team ID | PNT2022TMID00107 |
| Project Name | AI-based localization and classification of skin disease with erythema |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

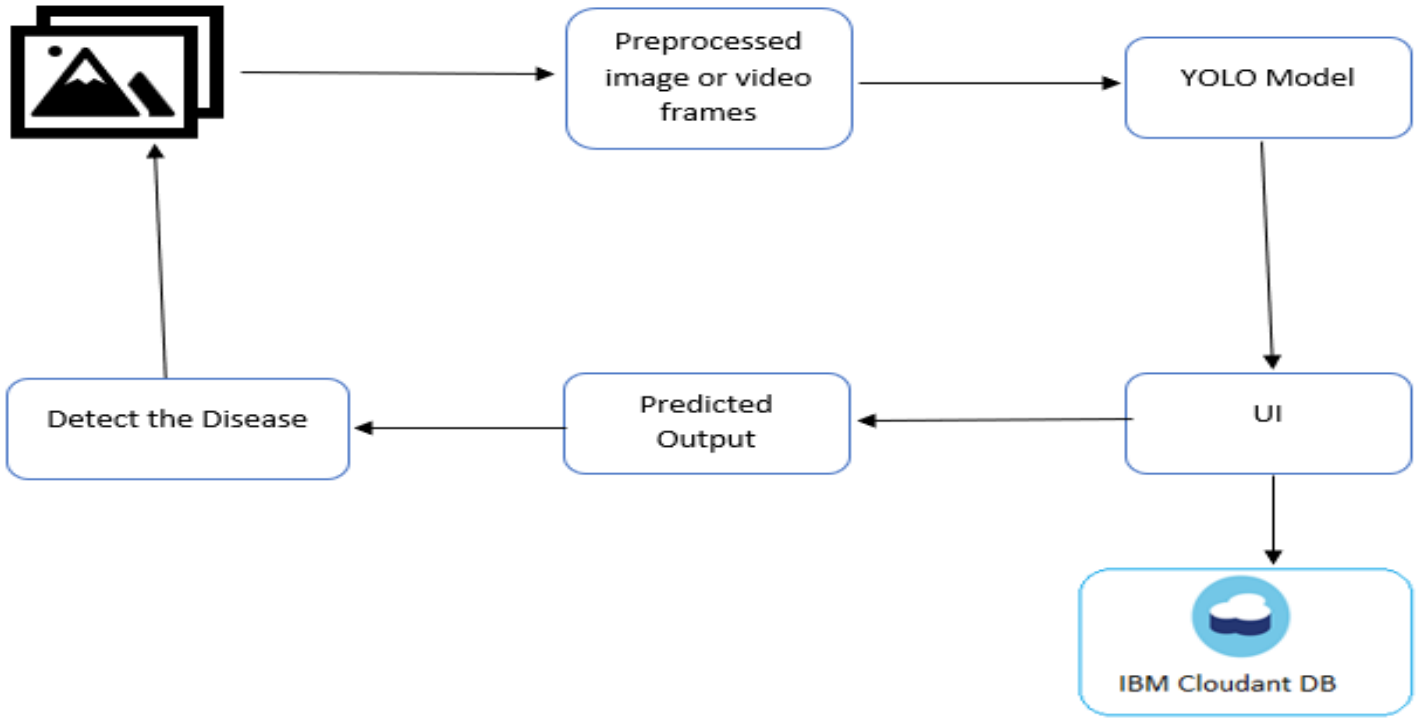

**Table-1 : Components & Technologies:**

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | How user interacts with application e.g. Web UI, Mobile App, Chatbot etc. | HTML, CSS, JavaScript / Angular Js / React Js etc. |
| 2. | Application Logic-1 | The uploaded images and data of the users will be stored in the data base. | MySQL |
| 3. | Application Logic-2 | The Machine learning model should be trained. | YOLO in CNN |
| 4. | Application Logic-3 | The CNN Algorithm will classify the uploaded images of the user. | Python |
| 5. | Database | Data Type, Configurations etc. | MySQL, NoSQL, etc. |
| 6. | Cloud Database | Database Service on Cloud | IBM DB2, IBM Cloudant etc. |
| 7. | File Storage | File storage requirements | IBM Block Storage or Other Storage Service or Local Filesystem |
| 8. | Machine Learning Model | A Deep Learning Pytorch Object Detection Yolov5 Model is trained on the dataset with 10,000 images with 7 different classes. | YOLO Model. |
| 9. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud | Local, Cloud Foundry, Kubernetes, etc. |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Tensorflow and Keras designed to enable fast Experimentation with deep neural networks, it focuses on being user-friendly, modular, and extensible | Tensorflow, Keras. |

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 2. | Security Implementations | Encryption is a mathematical tool that allows for encryption of data, ensuring privacy while at the same time, allowing computations to be performed on the encrypted data. | e.g. SHA-256, Encryptions, IAM Controls, OWASP etc. |
| 3. | Scalable Architecture | Performance will be good even with the higher user traffic | Django and flask |
| 4. | Availability | With good scalable architecture, the application has less tendency to go down and performance efficient | IBM Cloud |
| 5. | Performance | With greater accuracy, the performance is high | Incremental feature updating with alpha and regression testing methodologies. |