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

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|---|---|
| Date | 20 October 2022 |
| Team ID | PNT2022TMID35954 |
| Project Name | Project - Visualizing and Predicting Heart Diseases with an Interactive Dashboard |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

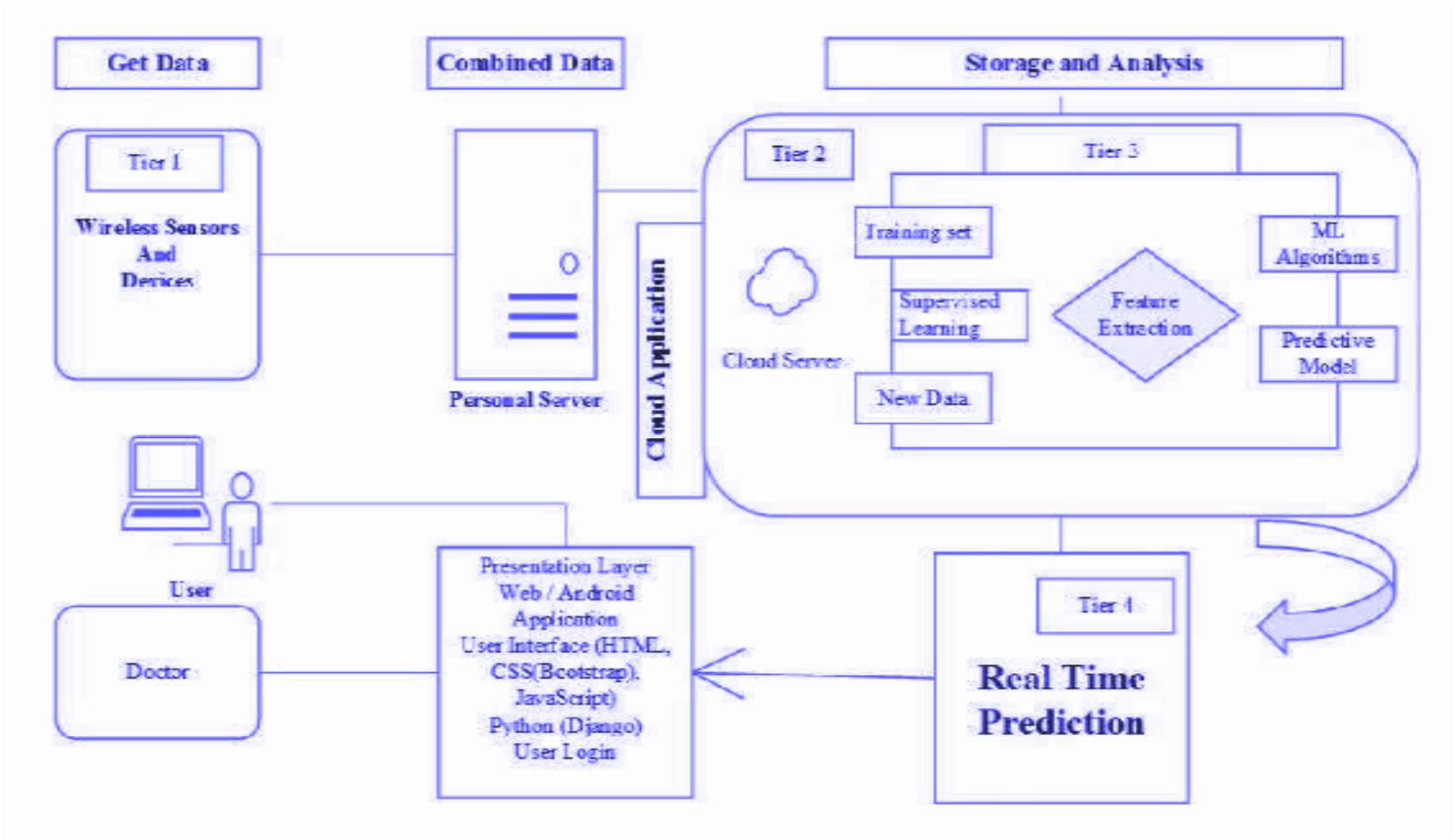
Get Data
Combined Data
Storage and Analysis
Tier 1
Wireless Sensors And Devices
Personal Server
Cloud Application
Tier 2
Tier 3
Training set
ML Algorithms
Supervised Learning
Feature Extraction
Predictive Model
Cloud Server
New Data
User
Doctor
Presentation Layer
Web / Android Application
User Interface (HTML, CSS(Bootstrap), JavaScript)
Python (Django)
User Login
Tier 4
Real Time Prediction

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

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | How user interacts with application e.g.<br>Web UI, Mobile App, Chatbot etc. | HTML, CSS, Python etc. |
| 2. | Application Logic-1 | Logic for a process in the application | Java / Python |
| 3. | Application Logic-2 | Logic for a process in the application | IBM Cognos Analytics |
| 4. | Application Logic-3 | Logic for a process in the application | IBM Watson Assistant |
| 5. | Database | Data Type, Configurations etc. | MySQL, NoSQL, etc. |
| 6. | Cloud Database | Database Service on Cloud | IBM DB2, IBM Pak etc. |
| 7. | File Storage | File storage requirements | Use Professional Records Storage, IBM Block Storage or Other Storage Services. |
| 8. | External API-1 | Purpose of External API used in the application | IBM SPSS, etc. |
| 9. | Machine Learning Model | Purpose of Machine Learning Model | Prediction Models |
| 10. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud<br>Local Server Configuration:<br>Cloud Server Configuration : | Personal Server, IBM Cloud Server etc. |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | List the open-source frameworks used | Technology of Open Source framework - Flask in Python. |
| 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) | Technology used - IaaS, PaaS, SaaS (IBM Cloud). |
| 4. | Availability | Justify the availability of applications (e.g. use of load balancers, distributed servers etc.) | Technology used - The availability of getting used to this software or product and designing is through accessing IBM Cognos Analytics and IBM Cloud. |
| 5. | Performance | Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc. | Technology used - The performance should be fast relaying. This prediction system should be made available in cloud to ensure better accessibility and setting a milestone in providing good quality affordable healthcare. |

**References:**


https://www.ibm.com/products/cognos-analytics

https://cloud.ibm.com/catalog/services/watson-assistant

https://www.ibm.com/in-en/cloud-paks

https://www.ibm.com/cloud