Visualizing and Predicting Heart Diseases with an Interactive Dash Board

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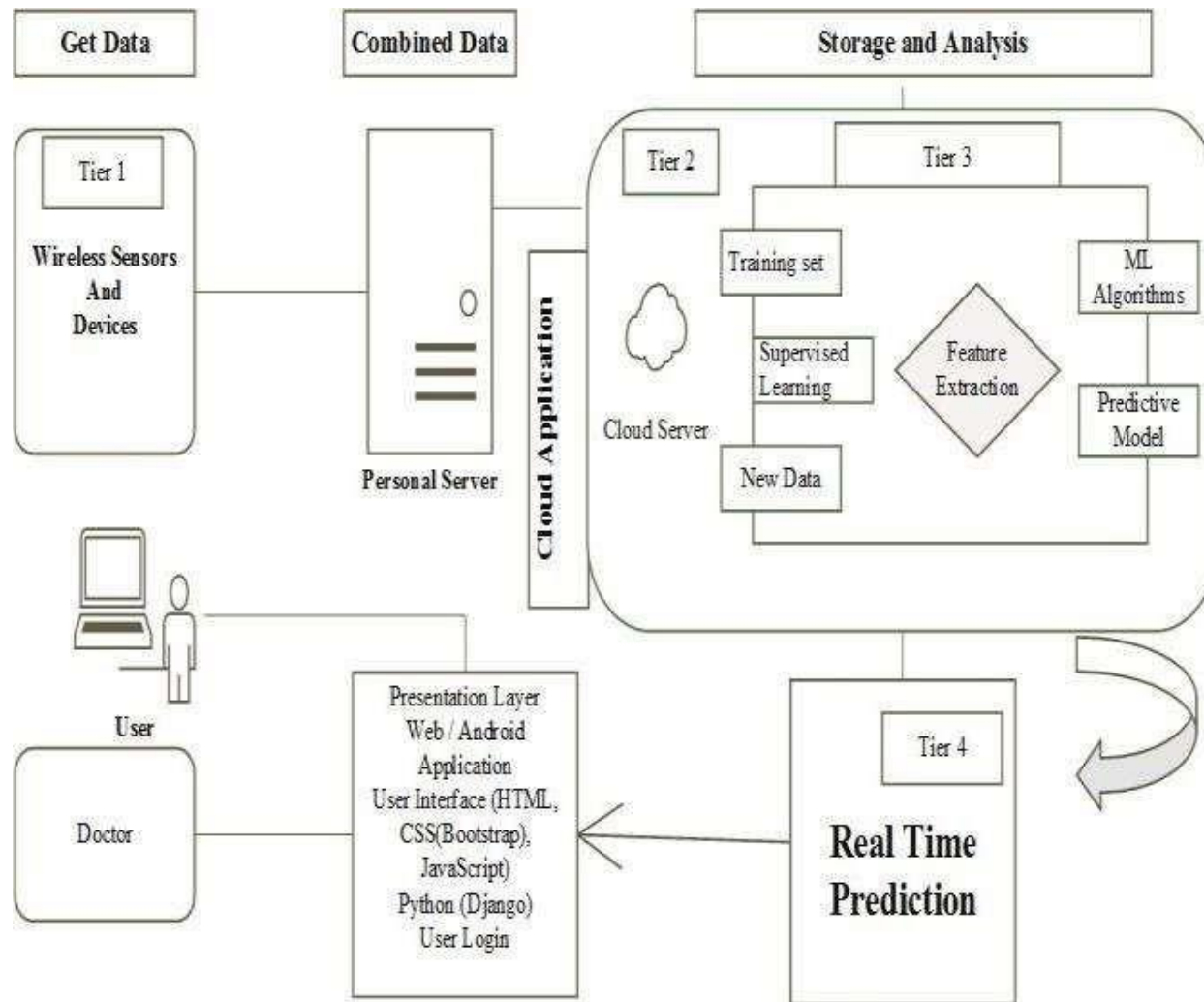
Technical Architecture

Get Data

Combined Data

Storage and Analysis

Tier 1

Wireless Sensors And Devices

Personal Server

Cloud Application

Cloud Server

Tier 2

Tier 3

Training set

Supervised Learning

New Data

Feature Extraction

ML Algorithms

Predictive Model

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. Web UI, Mobile App, etc.	HTML, CSS, Python etc.
2.	Application Logic-1	Logic for a process in the application	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, 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	Purpose of External API used in the application	IBM SPSS, etc.
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System /Cloud Local Server Configuration: Cloud Server Configuration :	Personal Server, IBM Cloud Server etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source frameworks used	Technology of Opensource framework – Django or Flask inPython.
2.	Security Implementations	Security / access controls implemented, use of firewalls etc.	e.g. Privacy - Encryptions, IBMSecurity Manager etc.
3.	Scalable Architecture	Scalability of architecture (3 – tier, Micro-services)	Technology used - IaaS, PaaS, SaaS (IBM Cloud).
4.	Availability	Availability of application	Technology used - The Availability ofgetting used to this software or product design is through by accessing IBM cognos Analytics and IBM cloud.
5.	Performance	Performance of the application	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