Project Design Phase-II

Technology Stack(Architecture & Stack)

Date	18 October 2022
Team ID	PNT2022TMID04431
Project Name	Visualizing and Predicting Heart Diseases with an Interactive Dashboard

Technical Architecture:

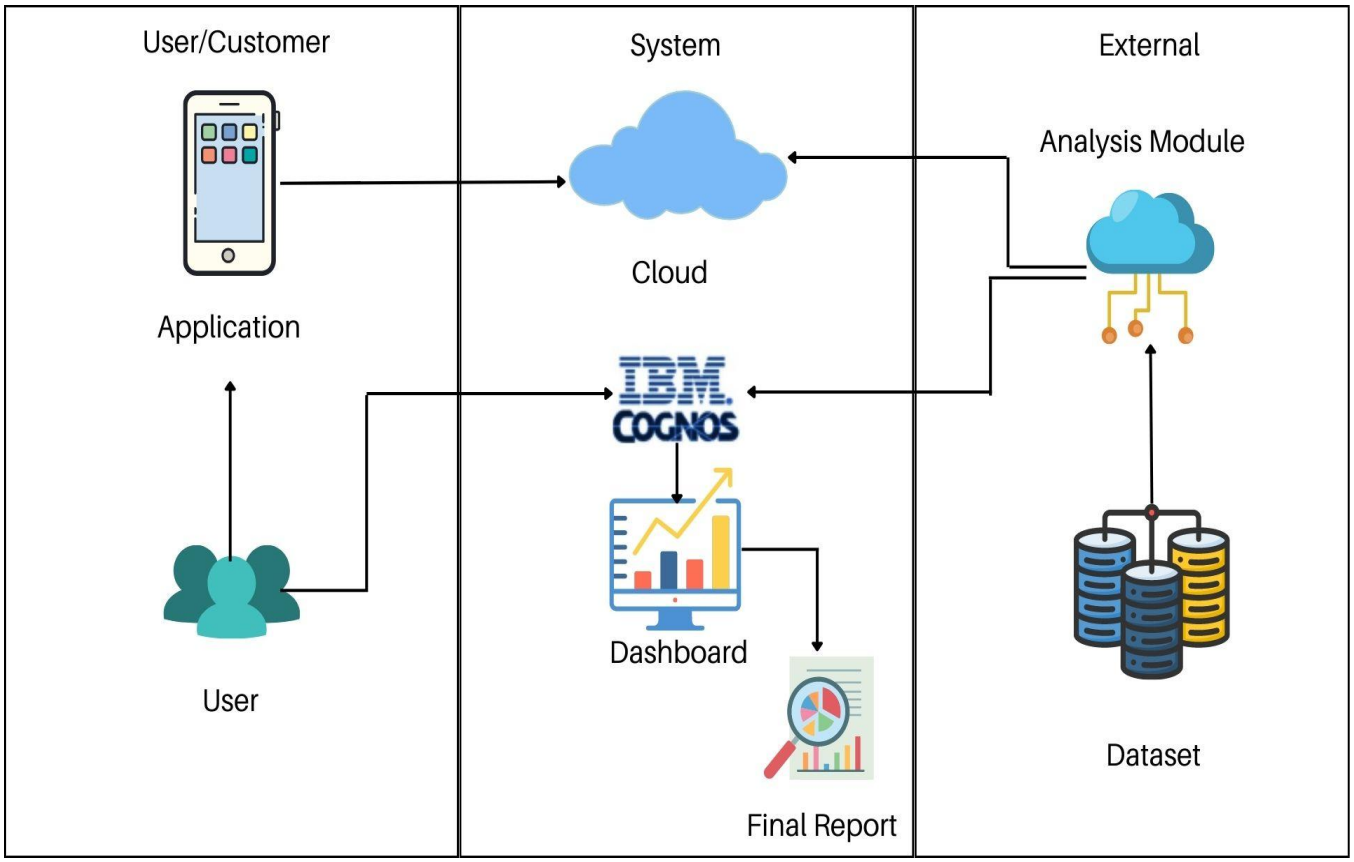

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	Importing data	Data is imported from external sources and is used for the analytics.	Python, Numpy , Pandas
2.	Data Cleaning and Preprocessing	Data cleaning is a process by which inaccurate, poorly formatted, or otherwise messy data is organized and corrected. Data pre-processing, a component of data preparation, describes any type of processing performed on raw data to prepare it for another data processing procedure.	Python
3.	Training data	Training data is the subset of original data that is used to train the machine learning model.	Python
4.	Testing data	Test data is data which has been used to check the accuracy of the ML model.	Python
5.	Building model	Building a machine learning model to predict the disease from the data using machine learning algorithms.	Python, Sk learn
6.	Model training	Train the model using the Train and Test data.	Python
7.	Model performance evaluation	One metric for measuring classification model performance is accuracy. Accuracy is formally defined as the percentage of correct predictions made by our model.	Python
7.	Checking accuracy	A data accuracy check is a set of quality validations that take place before using data.	Python

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Frameworks are about more than just creating a development environment. They help to define a set of standards that programmers can follow when working collectively. When programmers choose a certain framework, they adopt the specific tools and methodologies associated with that framework. This also means they must be mindful of your choice, as they may end up with processes that don't fit the needs of their project or the developers involved.	Django
2.	Security Implementations	IAM Controls and Encryptions are implemented to improve security of the application.	IAM Controls, Encryptions.
3.	Scalable Architecture	Scalable operations are implemented using APIs like HTTP, HTTPS.	API Gateway
4.	Availability	To ensure high availability and optimal service, the load balancer performs continual health checks of each server in the cluster, using probes to determine its eligibility for requests.	Server Load Balancers
5.	Performance	Performance of the system is increased using caching methodology.	Caching