Project Design Phase-II

Solution Requirements (Functional & Non-functional)

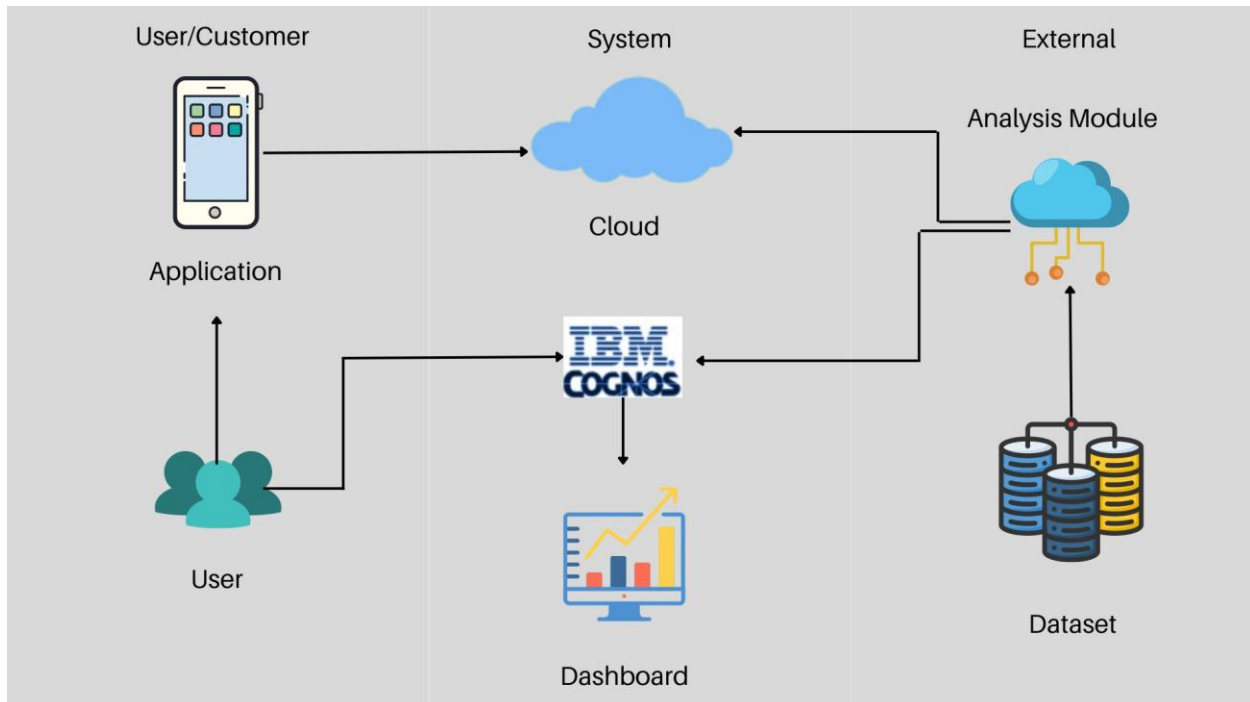| Team ID	PNT2022TMID04459
Project Name	Visualizing and Predicting Heart Diseases with an Interactive Dashboard

Technical Architecture:

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	Importing data	Data Import allows you to upload data from other sources and combine it with data collected by Analytics.	Python , numpy , pandas
2.	Data Cleaning	Data cleaning is a process by which inaccurate, poorly formatted, or noisy data are organised and corrected.	Python
3.	Data Pre-processing	Data pre-processing is a component of data preparation, processing performed on raw data to prepare it for another data processing procedure is described	Python

4.	Training data	Training data is the data you use to train an algorithm or machine learning model to predict the outcome you design your model to predict.	Python
5.	Testing data	Test Data is data that is used to execute the tests on testware. Test data needs to be precise and exhaustive to uncover the defects.	Python
6.	Machine learning model	A machine learning model is defined as a mathematical representation of the output of the training process.	Python
7.	Improve model performance	For evaluating classification models accuracy is one of the metric. Informally, accuracy is the fraction of predictions our model got right	Python
8.	Checking accuracy	A data accuracy check is a set of quality measures that take place before using data.	Python

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	A framework is a structure that you can build software on. It serves as a foundation, so you're not starting entirely from scratch. Frameworks are typically associated with a specific programming language and are suited to different types of tasks. Let's say you're building a house. You could pour the foundation and frame the house yourself. It would take a lot of time, but you could do it. If all of that were already done for you, though, it would save you quite a bit of effort especially if it was done by expert home builders.	Django
2.	Security Implementations	SHA-1 or Secure Hash Algorithm 1 is a cryptographic hash function which takes an input and produces a 160-bit (20-byte) hash value. This hash value is known as a message digest. This message digest is usually then rendered as a hexadecimal number which is 40 digits long.	SHA-256, Encryptions, IAM Controls, OWASP

3.	Scalable Architecture	Microservices architecture is an application structure that divides services into separate modules which are loosely coupled together, communicating with each other through light-weight mechanisms ,AMQP, HTTP resource API, WebSockets .	Microservices Smart Endpoints and Dumb Pipes, AWS Lambda, API Gateway
4.	Availability	A load balancer is a technology that distributes high traffic sites among several servers using a network-based hardware or software-defined appliance. 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/ Global Service Load Balancing
5.	Performance	In computing, a cache is a high-speed data storage layer which stores a subset of data, typically transient in nature, so that future requests for that data are served up faster than is possible by accessing the data's primary storage location.	Caching