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

Date	03 October 2022
Team ID	PNT2022TMID45493
Project Name	Project - Analytics for Hospitals Health-Care Data
Maximum Marks	4 Marks

Technical Architecture:

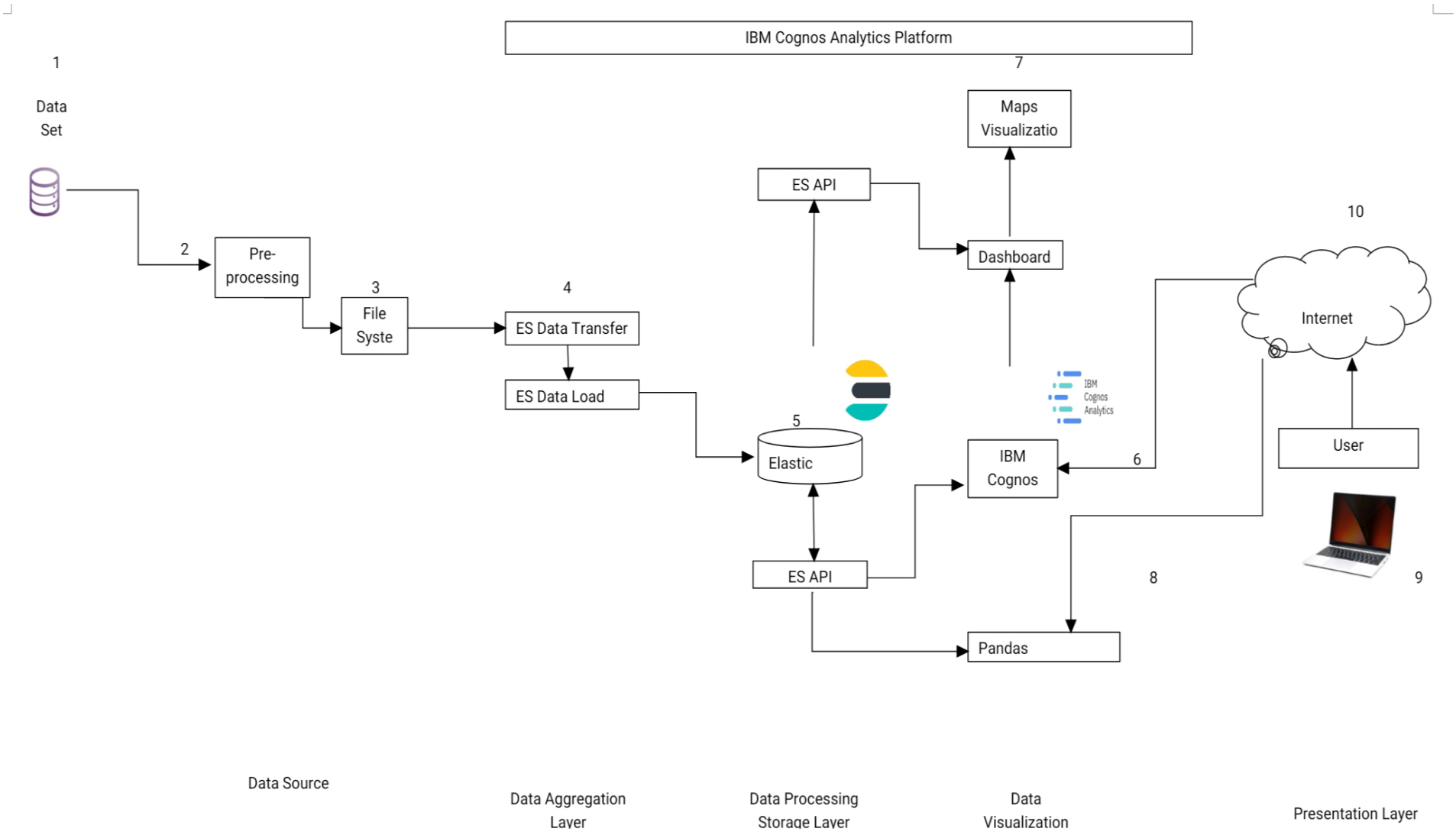

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User interact with application or web	IBM Cognos Analytics tool
2.	Application Logic-1	Data Pre-processing	IBM Cognos Analytics
3.	Application Logic-2	Data Cleanse and preparation	IBM Cognos Analytics tool
4.	Application Logic-3	Data Extraction, Visualisation and prediction	IBM Cognos
5.	Database	Dataset stored in temporary storage	MySQL, NoSQL, etc.
6.	Cloud Database	.csv file contains the data stored in the cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	User Authentication	Gmail, APIs etc..
9.	External API-2	Protecting the dataset that is explored	Gmail and APIs
10.	Machine Learning Model	To predict the length of stay	Machine Learning Algorithms
11.	Data Visualization	The data is visualized for easily understand the data and for decision making	IBM Cognos Analytics and python

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Data science is the process of using an iterative approach to extract insights from raw data	IBM Cognos Analytics , Numpy, Pandas, Matplotlib
2.	Security Implementations	security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	3 – tier, Micro-services	Presentation tier - HTML, CSS and JavaScript Application tier - Python, Machine Learning Data tier - MySQL, NoSQL
4.	Availability	Use of load balancers, distributed servers	IBM Cognos
5.	Performance	Number of requests per sec, use of Cache, use of CDN'.	Hosting Server