

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

Date	16 October 2022
Team ID	PNT2022TMID00164
Project Name	Project – A new hint to transportation – Analysis of the NYC bike share system
Maximum Marks	4 Marks

Technical Architecture:

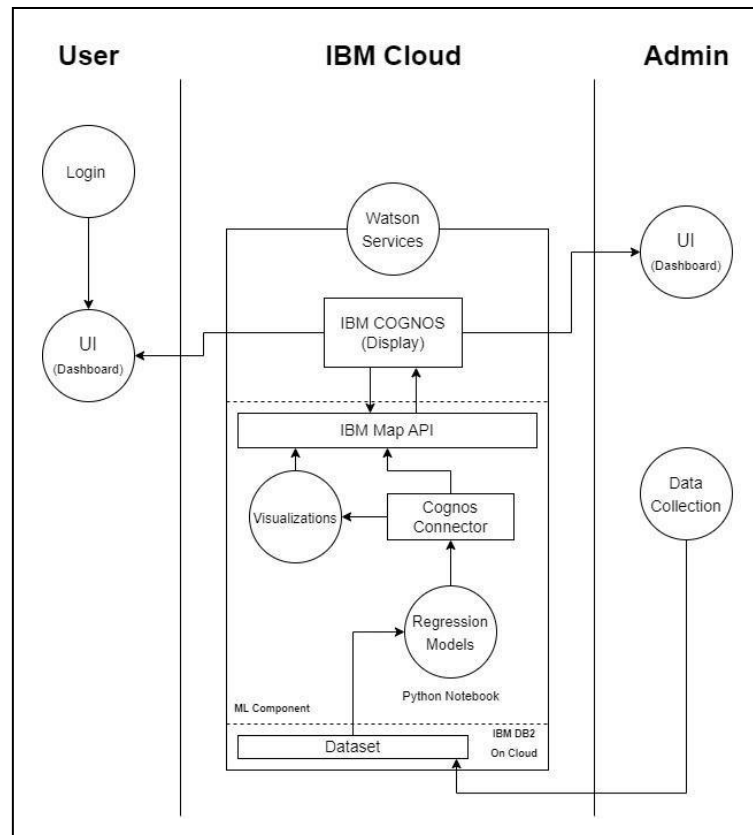


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface - 1	1. Make accessible the analyzed result to the user as visualizations 2. Display the conclusions drawn from data analysis	HTML, CSS, JavaScript, React JS, IBM Cognos, etc.
2.	Application Logic-1	The application's process logic	Java / Python
3.	Database	The memory-intensive Citi bike dataset has to be stored.	MySQL, MongoDB, etc.
4.	Cloud Database	To store the memory intensively of Citi bike dataset on Cloud	IBM DB2, IBM Cloudant etc.
5.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
6.	External API-1	To obtain geographical information of Citi bike in NYC and map it	IBM Map API
7.	External API-2	To perform deep data analysis	Google Colab, Jupyter Notebook
8.	Machine Learning Model	1. To help forecast results / values for new incoming data 2. To graphically represent the data based on dataset	Regression Models
9.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Local Server (localhost) Cloud Server Configuration : IBM Cloud	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Security Implementations	Encrypting and securing login credentials of users	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
2.	Scalable Architecture	The IBM Cognos BI presentation service, batch report and report services, job and schedule monitor service, and log service are all operated by a dispatcher found on each IBM Cognos BI server..	IBM Cognos BI Server scalability
3.	Availability	<p>Through an IBM Cognos BI gateway that is deployed on a Web server, all Web communication in IBM Cognos BI takes place. In the applications tier, each gateway can communicate with just one dispatcher.</p> <p>The Content Manager on the IBM Cognos Business Intelligence server is used to store and manage data, while the dispatcher is used to launch IBM Cognos services and direct requests.</p> <p>Correct relational transactions are used by Content Manager while writing to the content store RDBMS. The content store can be backed up and restored using standard DB tools.</p>	IBM Cognos BI gateway, dispatchers, etc.
4.	Performance	The amount of data to be analysed is enormous	IBM Cognos content store