

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

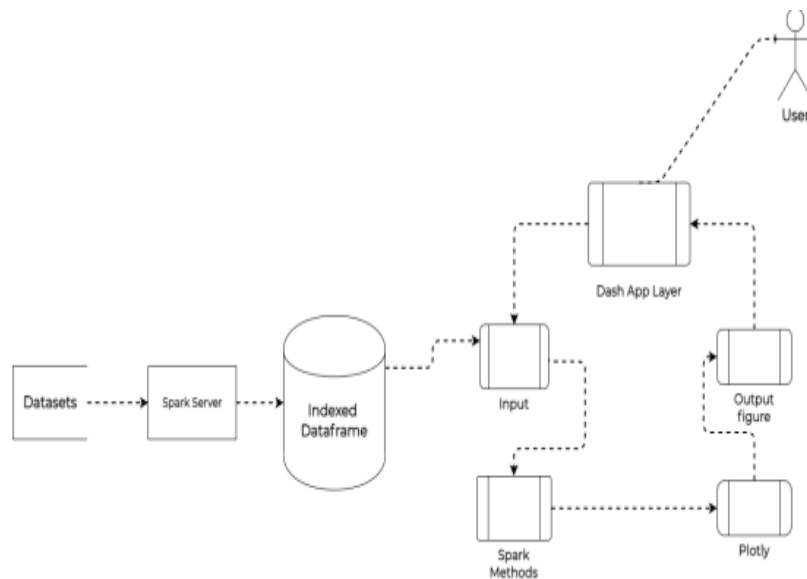
Date	03 October 2022
Team ID	NM2023TMID07514
Project Name	Project - Data-Driven insights on Olympic Sports Participation and Performance
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2

Example: Order processing during pandemics for offline mode

Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology	
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript, React JS.	
2.	Application Logic-1	Logic for a process in the application	Python (Pandas, Numpy)	
3.	Application Logic-2	Logic for a process in the application	Python (Scikit-Learn, XGBoost)	
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant	
5.	Database	Data Type, Configurations etc.	IBM DB2	
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant et	
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem	
8.	External API-1	Purpose of External API used in the application	National Center for Education Statistics(NCES) API	
9.	External API-2	Purpose of External API used in the application	Google Maps API	
10.	Machine Learning Model	Purpose of Machine Learning Model	Random Forest, Support Vector Machine (SVM)	
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	IBM Cloud, Github	

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	NumPy
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	HTTPS
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Docker
4.	Availability	Justify the availability of applications (e.g. use of load balancers, distributed servers etc.)	Kubernetes
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Redis

References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>