Technology Stack (Architecture & Stack)

Date	26-10-2023
Team ID	TEAM-591164
Project Name	International Debt Statistics
Max Marks	4 Marks

Technical Architecture:

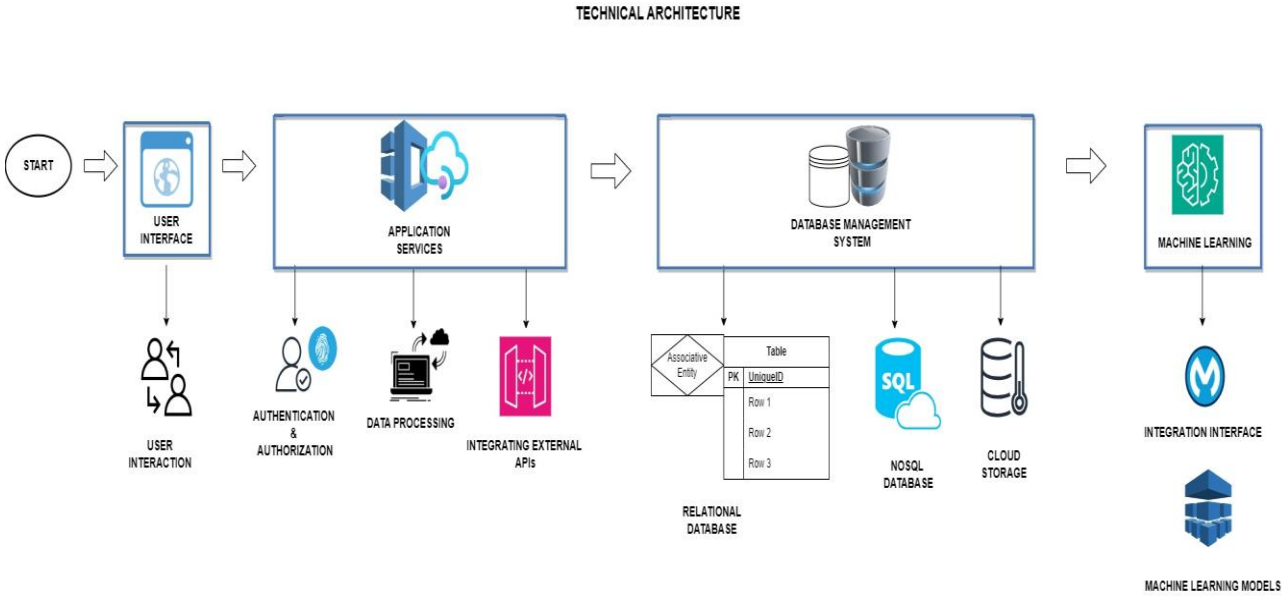

Table-1: Components & Technologies

Sno	Component	Description	Technology
1	User Inference	Web UI for user interaction.	HTML, CSS, JavaScript, and possibly data visualization libraries
2	Application Logic-1	Logic for data processing, analysis, and reporting.	Python, data analytics libraries like Pandas, NumPy, etc.
3	Application Logic-2	Integration of IBM Watson STT service for voice data analysis.	IBM Watson STT service
4	Application Logic-3	Integration of IBM Watson Assistant for conversational AI in data analysis.	IBM Watson Assistant.
5	Database	Data storage for analysis results and configurations.	MySQL, NoSQL, or other databases for storing processed data.
6	Cloud Database	Cloud-based database services for scalability.	IBM DB2, IBM Cloudant, etc.

7	File Storage	Storage for data files and other project-related files.	IBM Block Storage, Other Storage Service, or Local Filesystem
8	External API-1	Integration of external APIs for supplementary data.	IBM Weather API, etc.
9	External API-2	Integration of APIs like Aadhar API for additional data sources.	Aadhar API, etc.
10	Machine Learning Model	Use of machine learning models for advanced data analysis.	Machine learning libraries like TensorFlow, sci-kit-learn, etc.
11	Infrastructure	Deployment on local servers or cloud platforms for data processing.	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics

Sno	Characteristics	Description	Technology
1	Open-Source Frameworks	Utilization of open-source data analytics frameworks and tools.	Specific open-source and libraries used.
2	Security Implementations	Implementation of security measures, encryption, and access controls to protect sensitive data.	Encryption standards, access control mechanisms, and security best practices.
3	Scalable Architecture	Scalable architecture, possibly leveraging microservices for elasticity.	Microservices architecture, technologies for auto-scaling.
4	Availability	Ensuring high availability for data analytics services.	Load balancing, redundancy, and failover mechanisms.
5	Performance	Design considerations for optimizing data analytics performance.	Use of caching, distributed computing, and performance optimization strategies.