Project Design Phase-II (Technology Stack)

Date	12.10.2023
Team ID	NM2023TMID06081
Project Name	LEVERAGING DATA ANALYSIS FOR OPTIMAL MARKETING CAMPAIGN SUCCESS
Maximum Marks	4 Marks

Technical Architecture:

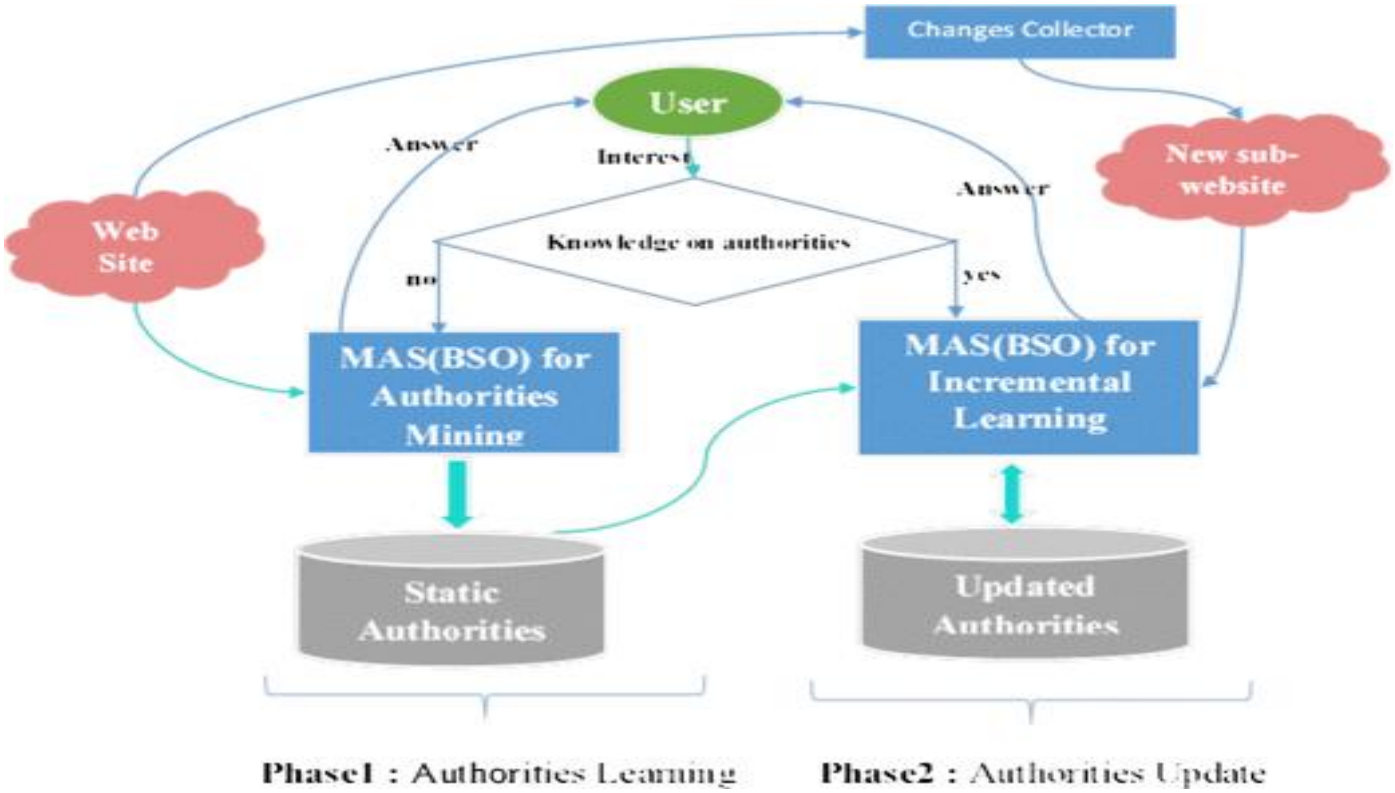

Table-1 : Components & Technologies:

S. No	Component	Description	Technology
1.	User Interface	Front-end application for user interaction and campaign control.	HTML, CSS, JavaScript
2.	Application Logic-1	Core logic for user requests and data processing.	User interface design tools (e.g., Figma, Adobe XD)
3.	Application Logic-2	Advanced features like A/B testing and segmentation automation.	Backend programming languages (e.g., Python, Java, Ruby)
4.	Application Logic-3	Features for predictive analytics and real-time monitoring.	Web frameworks (e.g., Django, Flask for Python)
5.	Database	Data storage and management for collected data.	Application servers (e.g., Node.js)
6.	Cloud Database	Scalable, cloud-hosted database for large data volumes.	Relational Database Management System (RDBMS) like MySQL, PostgreSQL, SQL Server
7.	File Storage	Storage for multimedia campaign assets (images, videos).	NoSQL databases like MongoDB, Cassandra
8.	External API-1	Interface with external data sources and third-party services.	Amazon RDS (Relational Database Service)
9.	External API-2	Additional interfaces for diverse external services.	Google Cloud SQL
10.	Machine Learning Model	Models for predictive analytics and trend forecasting.	Azure SQL Database
11.	Infrastructure (Server / Cloud)	Underlying hardware and software resources.	Amazon S3 (Simple Storage Service)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Utilize open-source frameworks for flexibility and cost-effectiveness.	Examples: Apache Hadoop, TensorFlow, Apache Spark.
2	Security Implementations	Implement robust security measures to protect data and maintain compliance.	Technologies: Encryption, firewalls, identity and access management (IAM).
3	Scalable Architecture	Design a scalable architecture to handle growing data and user demands.	Technologies: Cloud computing platforms (AWS, Google Cloud, Azure), microservices.

S.No	Characteristics	Description	Technology
4	Availability	Ensure high availability to prevent downtime and maintain user access.	Technologies: Load balancing, failover mechanisms, redundant infrastructure.
5	Performance	Optimize system performance to handle large data volumes efficiently.	Technologies: Caching, content delivery networks (CDNs), data indexing.