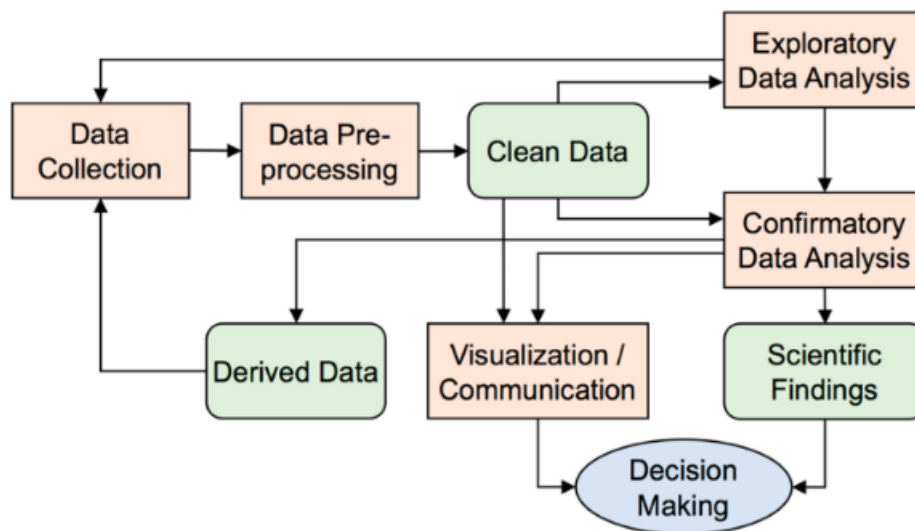


**Project Design Phase-II**  
**Solution Requirements (Functional & Non-functional)**

Date	13 May 2023
Team ID	NM2023TMID21570
Project Name	Empowering the Future: A literacy Rate Analysis for a Better Tomorrow

**Technical Architecture:**

The deliverable shall include the architectural diagram as below and the information as per the table 1 & table 2



**Table-1: components & Technologies:**

S. No	Component	Description	Technology
1.	Programming Language	The language that provides a wide range of libraries and tools for machine learning and image processing.	Python
2.	Dataset	A large and diverse dataset of literacy-related data required for training and evaluating the models.	Public datasets, government reports
3.	Data Pre-processing	Pre-processing the dataset to clean, transform, and prepare it for analysis.	Python (pandas, NumPy), data wrangling tools
4.	Data Visualization	Creating visual representations of the data to facilitate understanding and insights.	Tableau, Matplotlib, Plotly
5.	Database Management	Storing and managing the collected data efficiently.	IBM DB2, IBM Cloudant, SQL databases
6.	Cloud Deployment	Deploying the models and applications in a cloud environment for scalability and accessibility.	IBM Cloud, AWS, Microsoft Azure
7.	File Storage	Managing file storage requirements for the project.	IBM Block Storage, Cloud storage

**Table-2: Application Characteristics:**

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Utilizing open-source frameworks for performing deep learning tasks.	TensorFlow, Keras
2.	Security Implementations	Implementing security measures such as user authentication and encryption.	AES (Advanced Encryption Standard).
3.	Scalable Architecture	Designing a scalable architecture based on ResNet50 principles.	ResNet50
4.	Availability	Ensuring high availability through load balancers in cloud VPS.	IBM Cloud Hosting, Load Balancer
5.	Performance	Performance depends on input data quantity, quality, and model complexity.	IBM Load Balancer