

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

Date	31 October 2023
Team ID	NM2023TMID03087
Project Name	A Literacy Rate Analysis for a Better Future Tomorrow
Maximum Marks	4 Marks

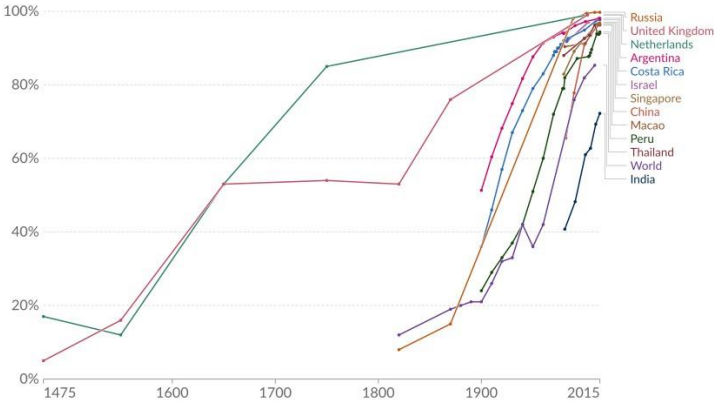
Technical Architecture:

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

2 Example:

Literacy rate, 1475 to 2015

The share of adults aged 15 and older who can both read and write.



Data source: WDI, CIA World Factbook, & other sources
OurWorldInData.org/literacy | CC BY
Note: Specific definitions and measurement methodologies vary across countries and time. See the 'Sources' -tab for more details.

Table-1:Components and Technologies

S.No	Component	Description	Technology
1.	Data Collection	Web scraping tools for collecting data from online sources	APIs (Application Programming Interfaces), IoT devices
2.	Data Storage	Data warehouses	<ul style="list-style-type: none">MySQL, PostgreSQL (for relational databases)MongoDB, Cassandra (for NoSQL databases)
3.	Data Processing and Analysis	<ul style="list-style-type: none">Data preprocessing algorithmsStatistical analysis toolsMachine learning models for predictive analysis	<ul style="list-style-type: none">Python (NumPy, Pandas) for data preprocessingR for statistical analysis
4.	Data Visualization	<ul style="list-style-type: none">Charts (bar charts, pie charts, line charts)Graphs (network graphs, heat maps)	Tableau, Power BI
5.	Security	<ul style="list-style-type: none">Encryption protocolsAccess control mechanisms	SSL/TLS

Table-2: Application and Technologies

S.No	Characteristics	Description	Technology
1.	Frontend Development	The frontend is the user interface where users interact with the application, view visualizations, and access literacy rate data.	React.js, Angular, or Vue.js

2.	Backend Development	The backend handles data processing, analysis, and serves requests from the frontend. It also manages user authentication and authorization.	Node.js, Django, Flask
3.	Database Management	Databases store and manage the collected literacy rate data, allowing efficient retrieval and analysis	MySQL, PostgreSQL, MongoDB
4.	Data Processing and Analysis	This component processes raw data, performs statistical analysis, and generates meaningful insights.	Python Libraries (NumPy, Pandas, SciPy)
5.	Authentication and Security	Ensures secure user authentication and protects data integrity.	JWT (JSON Web Tokens), OAuth, SSL/TLS