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

Date	21 February 2026
Team ID	LTVIP2026TMIDS55802
Project Name	Gemini historical artifact description
Maximum Marks	4 Marks

Technical Architecture:

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

Table-1:

S.No	Component	Description	Technology
1.	User Interface	Interface for marketing team to input and visualize data	HTML, CSS, JavaScript / ReactJS / AngularJS
2.	Application Logic-1	Logic for market data collection	Python / Node.js
3.	Application Logic-2	Logic for analysis and trend detection	Python (Pandas, NumPy) / IBM Watson Analytics
4.	Application Logic-3	Logic for generating insights and visualization	Python (Matplotlib, Seaborn) / Power BI / Tableau
5.	Database	Stores structured placement data	MySQL, PostgreSQL
6.	Cloud Database	Centralized data storage accessible across teams	Google BigQuery, Amazon RDS, IBM Cloudant
7.	File Storage	Store reports, user-uploaded data, market images	AWS S3 / IBM Block Storage / Google Cloud Storage
8.	External API-1	Real-time market trend or social media sentiment API	Twitter API / Google Trends API
9.	External API-2	Retailer integration for sales or stock data	Shopify API / Flipkart API / Retailer-provided API
10.	Machine Learning Model	Analyze placement effectiveness, clustering, prediction	Scikit-Learn / TensorFlow / IBM Watson ML
11.	Infrastructure (Server/Cloud)	Deployment and scaling infrastructure	Docker, Kubernetes, IBM Cloud, AWS, Azure

Table-2:

Application Characteristics

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	ReactJS, Node.js, Python, Flask, Pandas, Scikit-learn
2.	Security Implementations	All the security/access controls implemented, use of firewalls etc.	JWT Auth, OAuth 2.0, SHA-256, HTTPS, IAM, OWASP Top 10
3.	Scalable Architecture	Scalability of architecture (e.g., 3-tier, microservices)	Microservices, Docker, Kubernetes, RESTful APIs
4.	Availability	Availability (e.g., load balancers, distributed servers etc.)	HAProxy, NGINX Load Balancer, Multi-zone cloud setup
5.	Performance	Performance design (requests/sec, caching, CDNs)	Redis Cache, CloudFront CDN, Async APIs, DB Indexing