Project Design Phase-II

Technology Stack (Architecture & Stack)

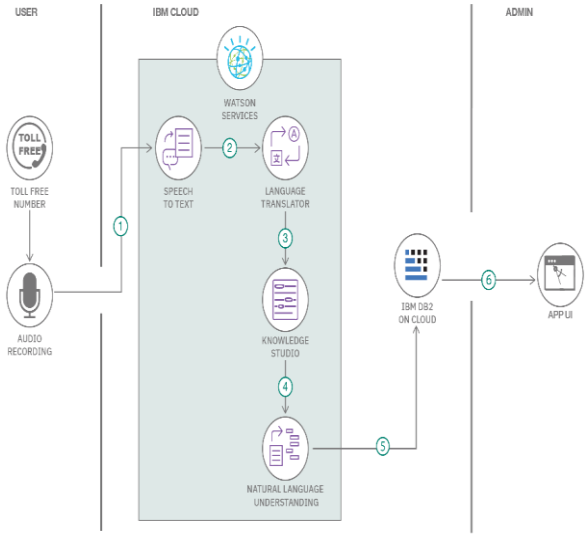
Date	28 June 2025
Team ID	LTVIP2025TMID59203
Project Name	EDUCATIONAL ORGANISATION USING SERVICENOW
Maximum Marks	

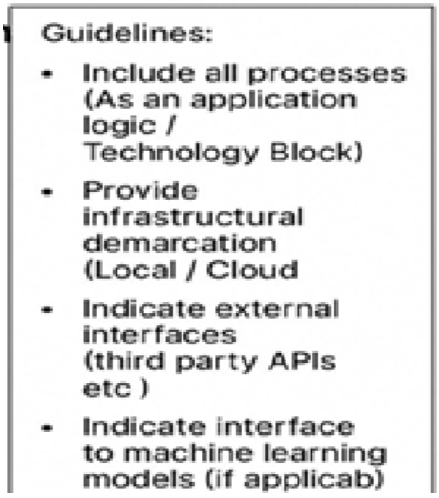
Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as

Example: Order processing during pandemics for offline mode

During pandemics, educational organizations faced significant challenges in ensuring uninterrupted learning, especially for students without internet access. To support offline education, schools and colleges implemented measures such as distributing printed learning materials, using SMS for announcements, and coordinating lessons through local volunteers or community centers. ducational content was also broadcast via radio and television to reach wider audiences. These offline strategies allowed institutions to maintain academic continuity, support student engagement, and ensure inclusivity despite limited digital infrastructure.





S.No	Component	Description	Technology
1	Student Interface	How students interact with the platform e.g. LMS, mobile app, portal	HTML, CSS, React JS, etc.
2	Academic Logic-1	Logic for managing course registration and enrollment	Python / Java
3	Academic Logic-2	Voice-enabled student query resolution	Google STT / Azure Speech Services
4	Academic Logic-3	Chatbot for academic assistance	Dialogflow / IBM Watson Assistant
5	Student Database	Stores student records, grades, and profiles	MySQL, PostgreSQL, NoSQL
6	Cloud Student Database	Hosted student database with remote access	AWS RDS, Azure SQL, IBM Cloud DB2
7	File Repository	Stores assignment uploads, study materials	Google Drive API, Local Storage
8	External API-1	Access to online educational resources	Open Education APIs, Google Books API
9	External API-2	Integration with National Academic Repositories	DigiLocker, NAD API
10	AI Recommendation Model	Suggests personalized learning materials	Collaborative Filtering, ML Models
11	Deployment Infrastructure	Deployment on cloud/local servers for education platform	AWS, GCP, Kubernetes, Local Servers

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	List the open-source frameworks used in educational tools and LMS platforms	Moodle, Canvas LMS, React JS
2	Security Implementations	Include all access controls like student login, faculty access, and firewalls	SHA-256, OAuth2.0, IAM Policies, OWASP

Table-2: Application Characteristics:

3	Scalable Architecture	Architecture that supports multiple campuses, departments, and concurrent users	3-tier model, Microservices, Kubernetes
4	Availability	High availability for course content, exams, and user dashboards	Load Balancers, Multi-zone deployment, Cloud CDN
5	Performance	Handles peak traffic during exams and enrollment	Redis Cache, CDN, Auto-scaling, Horizontal Pod Autoscaler