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

Date	31 January 2026
Team ID	LTVIP2026TMIDS65560
Project Name	Educational Organization Using ServiceNow
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: Order processing during pandemics for offline mode

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/

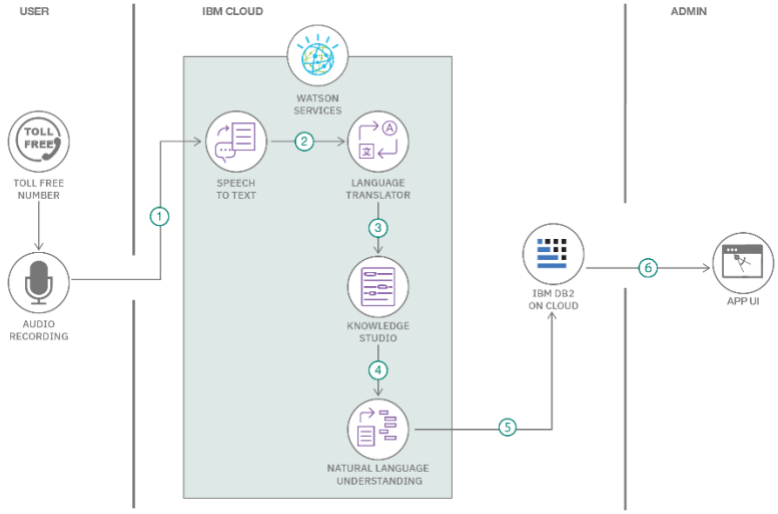

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.

2.	Application Logic-1	Logic for a process in the application	Java / Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of Opensource framework
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Justify the scalability of architecture (3 – tier, Micro-services)	Technology used
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Technology used
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	Technology used

Technical Architecture:

This project uses a low-code architecture powered by ServiceNow PDI (Personal Developer Instance). It includes:

Creation of custom tables for student admissions and academic progress,

Client-side automation via scripts,

Use of default ServiceNow components for workflows, forms, and UI.

The architecture is cloud-hosted, scalable, secure, and ideal for rapid educational workflow deployments.

Table-1 : Components & Technologies:

S.No Component Description Technology

1. User Interface Web UI where admin interacts with forms ServiceNow Form UI, HTML/CSS

2. Application Logic-1 Business logic for student admission process Client Scripts in JavaScript

3. Application Logic-2 Auto-fill, validations, dynamic updates GlideForm (g_form) APIs, JS

4. Application Logic-3 Result calculations and conditional logic Client Scripts

5. Database Stores student, admission, and academic records. ServiceNow Tables (MySQL-based)

6. Cloud Database Cloud-hosted internal DB through ServiceNow instance Hosted on ServiceNow Cloud DB

7. File Storage File uploads or documentation if added in future Not implemented (can extend)

8. External API-1 Optional for integrating school data from third parties (Future scope)

9. External API-2 Optional for Aadhaar/OTP-based student verification (Future scope)

10. Machine Learning Model Not applicable for current version NA

11. Infrastructure (Server / Cloud) Cloud-hosted PDI provided by ServiceNow ServiceNow Cloud Infrastructure

Table-2: Application Characteristics:

S.No Characteristics Description Technology

1. Open-Source Frameworks Client-side scripts and Glide APIs used in ServiceNow environment JavaScript (within ServiceNow)

2. Security Implementations Role-based access, record security, ACLs, and default ServiceNow IAM policies RBAC, ServiceNow Security Model

3. Scalable Architecture Tables and modules can be extended; ServiceNow handles horizontal scaling ServiceNow's scalable cloud infra

4. Availability Highly available via ServiceNow PDI (99.9% uptime), accessible through browser ServiceNow Cloud

5. Performance Optimized with server-side processing and client scripts; designed for minimal latency ServiceNow backend engine, caching mechanisms

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d