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

Date	03 October 2022
Team ID	D75F22880B8DC50BB9447C3F
Project Name	Analytics tool for placements
Maximum Marks	4 Marks

Technical Architecture:

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

1. Data Ingestion: Collect data from various sources, including student profiles, job listings, and placement outcomes, using data integration technologies.

2. Data Storage: Store the collected data in a scalable and secure database system, such as a relational database, NoSQL database, or data warehousing solution.

3. Data Processing: Implement data processing pipelines to clean, transform, and aggregate data for analysis, often using tools like Apache Spark or ETL (Extract, Transform, Load) processes.

4. Presentation Layer:

5. Web Interface: Create a user-friendly web-based interface for students, employers, placement coordinators, and administrators.

6. Mobile Interface: Develop a mobile application or responsive design for mobile access.

7.Application Layer:Web Application: Implement a backend web application (e.g., Node.js, Python, Ruby on Rails, Java) to handle user interactions, authentication, and orchestrate data retrieval from the data warehouse and analytics engine.
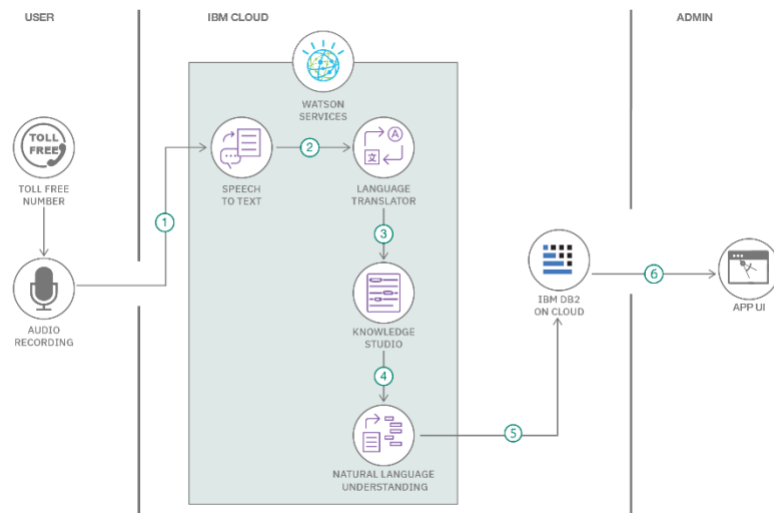
Table-1 : Components & Technologies:

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
S.No	Characteristics	Description	Technology
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