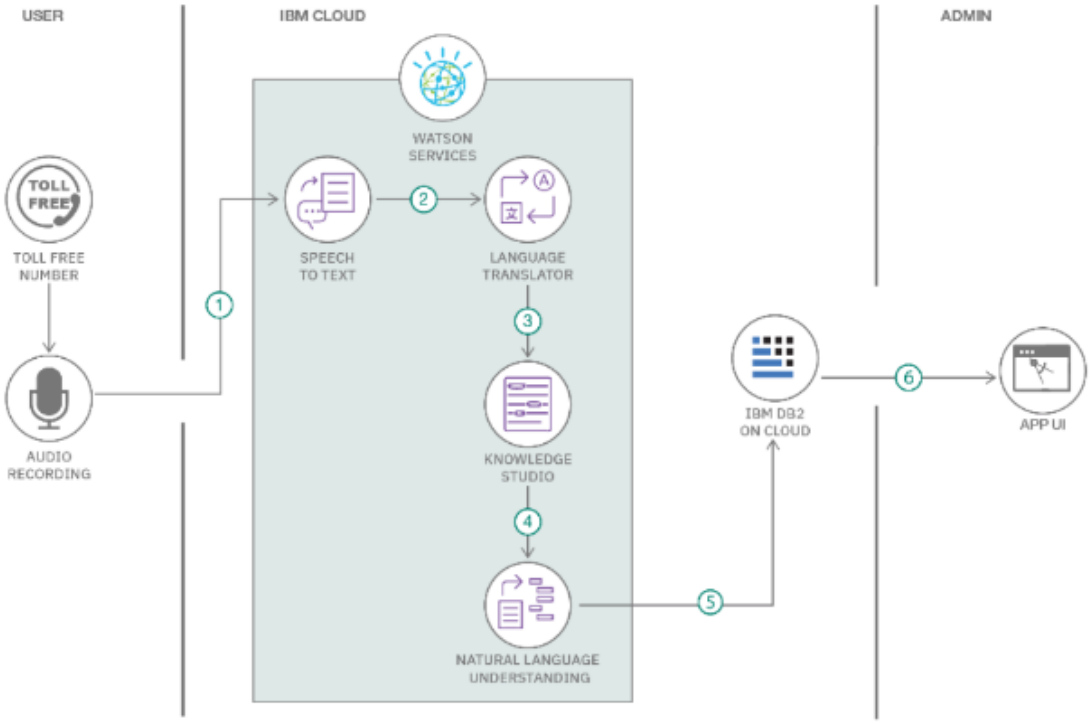
Project Planning Phase

Technology Stack (Architecture & Stack)

Date	10 November 2023
Team ID	591765
Project Name	Ecommerce Shipping Prediction using Machine Learning.
Maximum Marks	4 Marks

TECH STACK TEMPLATE FOR ECOMMERCE SHIPPING PREDICTION



1. Introduction

The technology stack for our E-commerce Shipping Prediction System using Machine Learning outlines the components, technologies, and application characteristics that make up our system. This stack is designed to ensure efficient order processing, accurate shipping predictions, scalability, security, and high performance.

2. Components & Technologies

Table-1: Components & Technologies

S.No	Component	Description	Technology
1	User Interface	How users interact with the application	[Web UI, Mobile App (iOS/Android), Chatbot], [HTML, CSS, JavaScript, Angular, React, etc.]
2	Application Logic-1	Logic for order processing in the application	[Java, Spring Boot, Python, etc.]
3	Application Logic-2	Logic for voice-to-text conversion in the application	[IBM Watson Speech to Text (STT), etc.]
4	Application Logic-3	Chatbot logic in the application	[IBM Watson Assistant, etc.]
5	Database	Data storage, type, and configurations	[MySQL, NoSQL (e.g., MongoDB), etc.]
6	Cloud Database	Scalable cloud database service	[IBM Db2, IBM Cloudant, AWS DynamoDB, etc.]
7	File Storage	File storage requirements	[IBM Block Storage, AWS S3, Local Filesystem, etc.]
8	External API-1	Weather data for shipping predictions	[IBM Weather API, etc.]
9	External API-2	Verification services	[Aadhar API, etc.]
10	Machine Learning Model	Machine learning models for shipping predictions	[Custom ML Models, TensorFlow, PyTorch, etc.]
11	Infrastructure (Server / Cloud)	Application deployment on local servers or cloud	[Local Server Configuration, Cloud Foundry, Kubernetes, AWS, Azure, GCP, etc.]

3. Application Characteristics

Table-2: Application Characteristics

S.No	Characteristics	Description	Technology
1	Open-Source Frameworks	Utilize open-source frameworks for scalability and development speed.	[Technology of Open-source framework]
2	Security Implementations	Implement robust security measures, including data encryption, access controls, and firewalls. Comply with industry standards such as OWASP.	[e.g., SHA-256, Encryption, IAM Controls, OWASP, etc.]
3	Scalable Architecture	Implement a scalable architecture using microservices for modular growth and load balancing.	[azure ,aws,gcp]
4	Availability	Ensure high availability with load balancers, redundancy, and distributed servers.	[data base,cdn]
5	Performance	Optimize performance with caching, Content Delivery Networks (CDNs), and request handling.	[Redis, Memcached]