Requirement Gathering and Analysis Phase
Technology Stack (Architecture & Stack)

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Team ID	SWTID1720104852
Project Name	Banking Management App (Mern)
Maximum Marks	3

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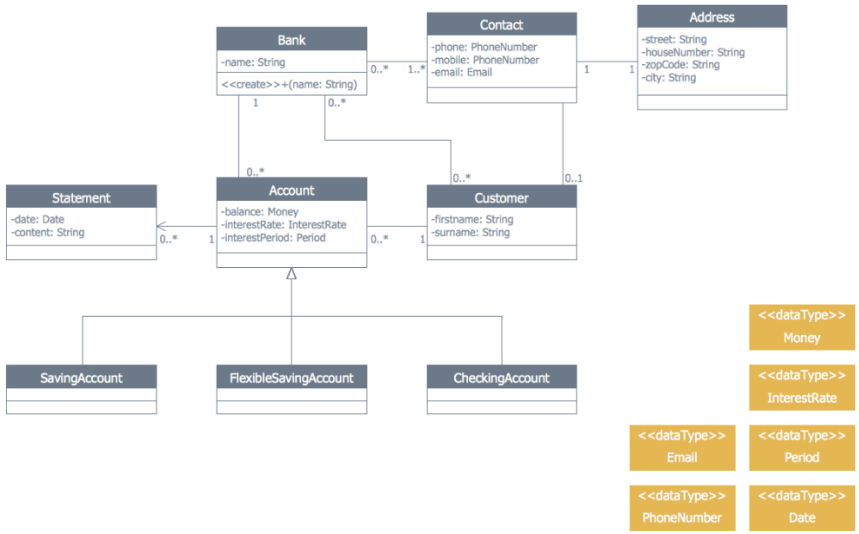
Technical Architecture:

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



Guidelines:

- Infrastructure**:** Utilize cloud platforms (AWS/Azure) for scalability and reliability.
- Authentication**:** Integrate Google and Facebook APIs for secure user login using OAuth.
- Database**:** MongoDB for efficient management of user profiles and transactions.
- Real-Time Updates: Implement WebSocket for instant transaction notifications.
- Frontend**:** Develop responsive interfaces with React.js for seamless user experience.
- Backend**:** Use Node.js and Express.js for robust API development (account management, transfers, loans).
- Admin Dashboard: Secure access through AWS IAM, with monitoring via CloudWatch.
- Security**:** Ensure HTTPS for secure communication and data encryption for sensitive information.
- Future Enhancements: Explore machine learning for advanced analytics in credit scoring and fraud detection.

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI, Mobile App	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Backend logic for core processes	Node.js, Express.js
3.	Application Logic-2	Speech-to-Text service for voice commands	IBM Watson STT service
4.	Application Logic-3	Chatbot for customer interactions	IBM Watson Assistant
5.	Database	User profiles, transactions	MongoDB
6.	Cloud Database	Scalable database service	AWS DynamoDB, Azure Cosmos DB
7.	File Storage	Document and image storage	AWS S3, Azure Blob Storage
8.	External API-1	Weather data integration	OpenWeatherMap API, IBM Weather API
9.	External API-2	Government ID verification	Aadhar API, etc.
10.	Machine Learning Model	Credit scoring and fraud detection	Custom ML models (e.g., for risk assessment)
11.	Infrastructure (Server / Cloud)	Deployment on cloud	AWS (EC2, Lambda), Azure (App Services, Kubernetes)

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	React.js for frontend, Node.js for backend	JavaScript
2.	Security Implementations	HTTPS for secure communication, JWT for authentication, AWS IAM for access control	e.g. SHA-256, JWT,HTTPS,AWSIAM
3.	Scalable Architecture	Microservices architecture for modularity and scalability	Docker, Kubernetes
4.	Availability	Load balancers for distributing traffic, Cloud redundancy for high availability	AWS ELB, Azure Load Balancer
5.	Performance	Caching strategies (Redis), CDN for static content delivery, optimized API endpoints	Redis, AWS CloudFront

References:

https://c4model.com/

https://React.js Documentation.com/