

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

Date	14 April 2025
Team ID	145206
Project Name	Sociopedia
Maximum Marks	4 Marks

Technical Architecture:

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

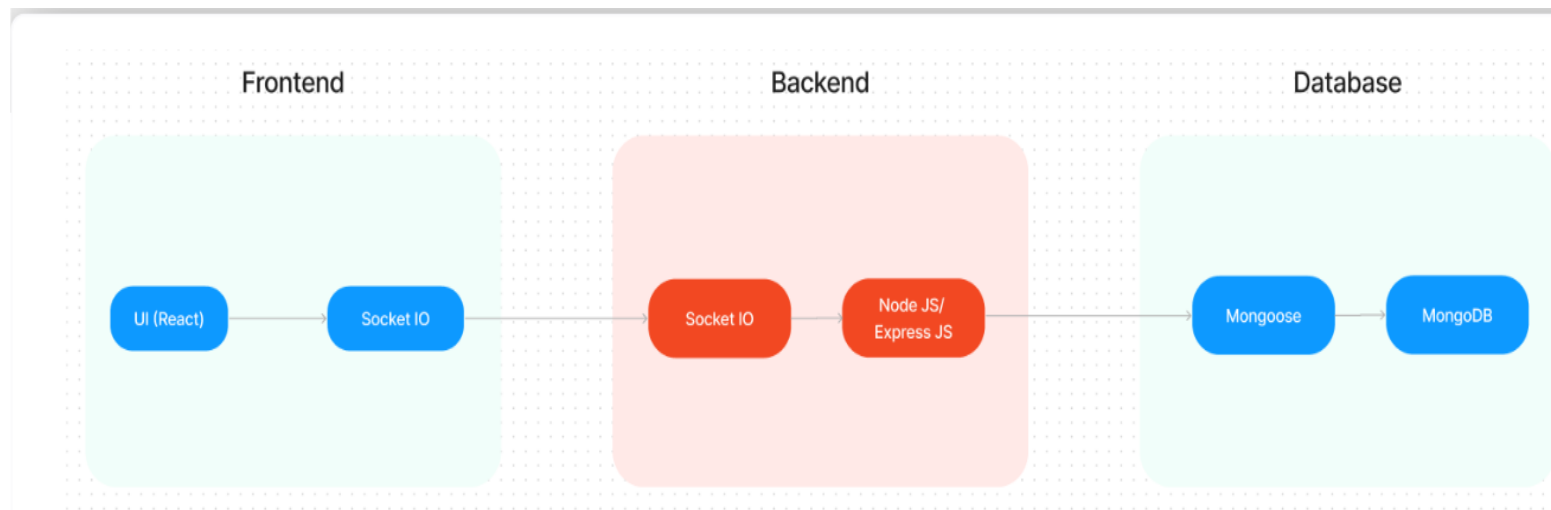


Table-1 : Components & Technologies:

S.No	Component	Description	Technology/Service
1.	User Interface	Responsive web app with real-time updates.	React.js, Material-UI, Socket.IO
2.	Application Logic-1	Authentication (JWT, OAuth).	Node.js, Express.js, Passport.js
3.	Application Logic-2	Post handling (CRUD, notifications).	Node.js, Express.js
4.	Database	User profiles, posts, friend lists.	MongoDB Atlas
5.	File Storage	Image/video uploads.	Cloudinary/AWS S3
6.	External API-1	Social login (Google/Facebook).	Firebase OAuth
7.	External API-2	Email notifications.	SendGrid/Mailgun
8.	Infrastructure	Scalable cloud deployment.	AWS EC2, Kubernetes

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology/Approach
1.	Open-Source Frameworks	Frontend/backend libraries.	React, Express, Mongoose
2.	Security	Encryption, rate limiting, OWASP guidelines.	bcrypt, JWT, Helmet.js
3.	Scalable Architecture	Microservices-ready, load balancing.	Docker, Kubernetes
4.	Availability	99.9% uptime with failover.	AWS Multi-AZ, MongoDB ReplicaSet
5.	Performance	Caching, CDN, optimized queries.	Redis, React.memo, CDN (CloudFront)

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>

