SOLUTION ARCHITECTURE :

Date	23 JUNE 2025
Team ID	LTVIP2025TMID53063
Project name	**BOOK NEST: WHERE STORIES NESTLE**
Marks	4 MARKS

BookNest – Solution Architecture:

BookNest Solution Architecture
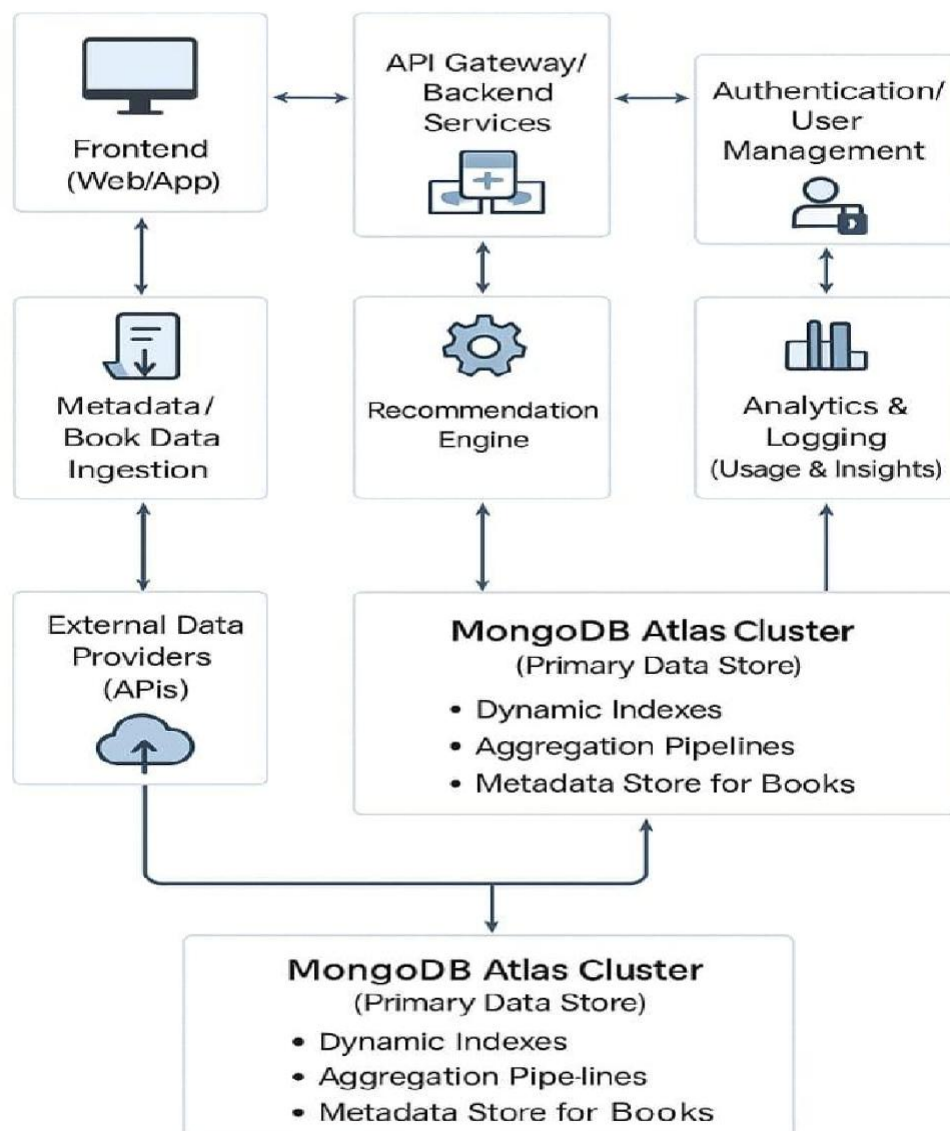
🔄 Objective

To design a scalable, secure, and responsive solution architecture that delivers a seamless experience for readers, authors, and administrators.

Layers of the Architecture :

1. Presentation Layer (Frontend)

- **Users:** Readers, Admins, Authors

- **Technology:** React.js (Web) / Flutter (Mobile)

- **Functions:**

  o Browse/search books , View book details & reviews , Manage cart and wishlist

2. Application Layer (Backend/API Layer)

- **Technology:** Node.js (Express) / Django (Python)

- **API:** RESTful API or GraphQL

- **Key Services:** User Authentication (JWT) ,Book Management (CRUD operations)

3. Data Layer (Database & Caching)

- **Relational Database:** PostgreSQL / MySQL

  o Users , Books , Orders , Authors

4. Integration Layer

- **Payment Gateway:** Stripe, Razorpay, or PayPal

- **Email & SMS Notifications:** SendGrid / Twilio

- **Search Engine:** ElasticSearch (for advanced book search)

5. DevOps & Deployment

- **CI/CD Pipeline:** GitHub Actions / GitLab CI

- **Hosting:** AWS (EC2, RDS, S3, Lambda), or Firebase for real-time DB

6. Monitoring & Security

- **Monitoring Tools:** Prometheus, Grafana, New Relic

- **Logging:** ELK Stack (Elasticsearch, Logstash, Kibana)

- **Security:**

  o SSL/TLS for HTTPS

  o OAuth 2.0 / JWT Authentication , Rate limiting (via API Gateway)