Technical Assessment: E-commerce lagbe-kichu.xyz

Project Overview

Develop a full-stack e-commerce web application with three user types: Admin, Seller, and Buyer. The platform will support product listing, ordering, and order management while incorporating a secure and scalable architecture.

The assessment evaluates a candidate's ability to build a real-world platform using modern tools, clean architecture, and best practices.

Technical Requirements

Frontend

- **Framework:** Next.js 14+ with App Router

- **Language:** TypeScript

- **State Management:** Redux Toolkit with RTK Query

- **Styling/UI:** Your choice (e.g., TailwindCSS, ChakraUI)

- **Form Handling:** React Hook Form + Zod (Recommended)

- **Authentication**: Cookie-based with refresh token mechanism **(Bonus)**

Backend

- **Framework:** Express.js

- **Language:** TypeScript

- **Database:** MongoDB with Mongoose

  - **Bonus:** PostgreSQL with Prisma

- **Authentication:** JWT (access and refresh tokens)

- **Validation:** Zod or Yup

- **Architecture:** Modular, service-based separation **(Bonus)**

Core Features by User Role

Admin Portal

- Admin-only login

- Role-based access control

- View all users (buyers/sellers)

- Ban/Suspend user accounts

Seller Portal

Roles (Optional Enhancements):
- Manager: Full access to product and order modules

- Accountant: View orders and payment info

- Inventory Staff: Add/edit product details only

Modules:
- Authentication & secure session

- Add/Edit/Delete Products:
  - Title, description, category, price
  - Multiple image uploads
  - One preview video per product

- Order Management:
  - View own orders
  - Approve or reject orders
  - Mark as: "Processing", "Out for Delivery", "Completed"

- Dashboard (Optional Bonus): View order stats, product performance

Buyer Features

- Authentication & secure session
- Browse/search products by:
  - Category, name, price
- Product Detail View:
  - Images, video, description, seller info
  - Discounted price with real-time countdown
- Add to Cart and Checkout:
  - Cash on Delivery
  - Bkash sandbox payment **(Bonus)**
- Order Tracking:
  - View current status and history
  - Statuses: Pending, Processing, Out for Delivery, Completed
- Leave reviews/ratings (Optional)

Order Lifecycle

Status	Triggered By	Notes
Pending Approval	Buyer	After checkout
Processing	Seller	After the seller approves
Out for Delivery	Seller	When dispatched
Completed	Seller	After the buyer confirms delivery
Cancelled/Rejected	Seller	If the order is not accepted or invalid

Each update must be timestamped and visible to both buyer and seller.

Optional Features (Bonus Points)

- Admin analytics dashboard

- Email notifications for order status

- Real-time updates with WebSockets

- Image uploads via free cloud service (e.g., Cloudinary)

- Role-specific dashboards (Seller, Admin)

- Multi-seller support per product (complex, bonus)

Evaluation Criteria

Category	Weight	Description
Code Quality	40%	Clean architecture, modularization, proper use of TypeScript
Feature Completion	30%	Full CRUD, order lifecycle, auth, and role logic
State Management	15%	Effective usage of RTK Query and frontend state
Database Design	10%	Mongo schema quality or Prisma models if PostgreSQL is used
Bonus Features	5%	Refresh token, analytics, real-time, email, file uploads, etc.

Submission Instructions

- Push the project to a public GitHub repository
- Include:
    - README.md with clear setup instructions
    - .env.example file
    - Database seed or mock data
    - Frontend and backend folders clearly separated
- Go to Google Form and submit your solution, CV, and information.
- Deployment (Bonus): Host on Vercel, Render, or any free platform

Time Frame:
- Recommended: 3–5 days
- Maximum: 7 days