

Task: Build a Simple E-Commerce API

Create a REST API that manages **users, products, and orders** and includes basic sales analytics.

Entities:

Users, Products, Orders

Endpoints:

User CRUD

1. POST /users – Register a new user
2. GET /users – Retrieve all users
3. GET /users/:id – Retrieve a single user
4. DELETE /users/:id – Deleting a user
5. PUT/PATCH /users/:id – Updating user

Product CRUD

6. POST /products – Add a new product
7. GET /products – Retrieve all products
8. GET /products/:id – Retrieve a single product
9. DELETE /products/:id – Delete a product
10. PUT/PATCH /products/:id – Update a product

Order CRUD

11. POST /orders – Place a new order (should update product stock)
12. GET /orders – Retrieve all orders
13. GET /orders/:id – Retrieve a single order
14. DELETE /orders/:id – Delete an order

15. PUT/PATCH /orders/:id – Updates an order

Analytics Endpoints (Data Science Relevance)

10. GET /analytics/top-products?limit=5 – Get top N selling products

11. GET /analytics/top-customers?limit=5 – Get top N customers by spending

12. GET /analytics/revenue – Get total revenue from all orders

13. GET /analytics/average-order-value – Compute average order value (AOV)

14. GET /analytics/customer-ltv/:user_id – Calculate simple **Lifetime Value (LTV)** for a user

Requirements:

1. Build the above-mentioned APIs only using node.js and express.js
2. Only use MongoDB as database
3. Dockerise the application.
4. Create a repo in github and share it during the final submission

Bonus Points:

1. Architecture diagram on how the service will look after deployment.
2. Write up on how this can be deployed on cloud.