**Deliverables for E-Commerce Microservices Demo with Kafka**

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### **1. Project Overview (PPT Slide)**

* **Title**: E-Commerce Shopping Site – Microservices Architecture
* **Team Members**: Gavish, Piyush, Saurabh, Naveen, Prajwal, Bharti, Chagam
* **Stack**:
  + Backend: Spring Boot
  + Messaging: Apache Kafka (running on WSL2 Ubuntu)
  + REST-based microservices (running on Windows)
  + DB: H2 or MySQL (based on use case)
  + GitHub: Individual repositories per service
* **Key Features**: Product catalog, ordering, recommendations, vendor evaluation

### **2. System Architecture Diagram (PPT Slide)**

* Show:
  + 3 Microservices:
    - CatalogService
    - OrderingService
    - VendorService
  + Kafka Broker (separate service on WSL2 Ubuntu)
  + Kafka Topics (e.g., order-events, product-updates, vendor-evaluation)
  + REST APIs exposed per microservice
  + Communication: Kafka + REST
  + DB connections (if any)
  + Integrations: Swagger UI
* Tools: Lucidchart / Draw.io

### **3. Sample Test Data**

* Each microservice should include sufficient sample data in its DB:
  + CatalogService: Categories, Products, Inventory
  + OrderingService: Customers, Cart Items, Orders
  + VendorService: Vendors, Mappings, Evaluations
* Data should be auto loaded via data.sql or via Flyway for testing/demo

### **4. Entity Relationship Diagram (ERD)**

* Minimum 3 ERDs (1 per microservice)
* Include:
  + **CatalogService**: Product, Category, Inventory
  + **OrderingService**: Cart, Order, Customer, Address
  + **VendorService**: Vendor, Rating, ProductMapping
* Tools: dbdiagram.io / Draw.io

### **5. Process Flows / Sequence Diagrams**

* 3–4 core flows (PPT slides):
  + **Product Browsing & Search**  
     → UI → CatalogService → DB
  + **Add to Cart & Place Order**  
     → UI → OrderingService → Kafka → VendorService
  + **Vendor Evaluation via Kafka Event**  
     → Kafka Event → VendorService → Save Evaluation
  + **Admin Modifying Product Info**  
     → Admin Portal → CatalogService → Kafka Event → Re-index/Search updates

### **6. Codebase Organization**

Each microservice should include:

* Spring Boot REST APIs
* KafkaProducer and KafkaConsumer (Spring Kafka Template)
* DTOs & Entity Models
* Services Layer & Event Handlers
* application.yml with Kafka and DB configs
* Testing (unit/integration optional)
* Error handling and logging
* Swagger for API docs

### **7. GitHub Repositories**

* Each service in separate repository:
  + catalog-service
  + ordering-service
  + vendor-service
* README.md for each with:
  + Setup instructions
  + Kafka topic details
  + REST API endpoints
  + Sample request/response
  + Local run guide (including Kafka setup on WSL2)

### **8. Kafka Topics Documentation**

* Table listing:
  + Topic Name
  + Key / Value structure
  + Producer Service
  + Consumer Service
  + Example payload (JSON)
  + Sample Kafka console commands (to test manually if needed)

### **9. Demo Plan / Test Cases**

* Scenarios to cover during the demo (in PPT or Word):
  + Product browsing & filtering
  + Add to cart → Place order → Event triggers
  + Vendor rating auto-evaluation via Kafka
  + Admin updates triggering Kafka messages
* Optionally include Postman collection
* Demonstrate testing of API endpoints on Swagger UI

### **10. Feature Summary (Excel or Word Table)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **User Story** | **Microservice** | **Priority** | **Status** | **Assigned** |
| Browse Products | Catalog | High | Completed | Gavish |
| Place Order | Ordering | High | Completed | Prajwal |
| Vendor Rating | Vendor | Medium | In Progress | Bharti |
| *(and so on...)* |  |  |  |  |

### **11. Retrospective Notes (Optional Slide)**

* What worked well
* Challenges faced (e.g., Kafka config, cross-platform setup)
* Lessons learned
* Improvements/future roadmap

### **12. Final Submission Format (for Demo Only)**

* **Folder Structure (ZIP or GitHub OR GDrive link)**:

ecommerce-microservices-demo/

├── architecture-diagram.pptx

├── process-flows/

│ ├── place-order-sequence.png

│ └── vendor-evaluation.png

├── erd-diagrams/

│ ├── catalog-erd.png

│ ├── ordering-erd.png

│ └── vendor-erd.png

├── kafka-topics.md

├── demo-plan.docx

├── feature-summary.xlsx

├── catalog-service-link.txt # Link to GitHub repo

├── ordering-service-link.txt # Link to GitHub repo

├── vendor-service-link.txt # Link to GitHub repo

└── README.md

### **13. Live Project Folder Structure (Real Repos)**

Each team's **real development repo** (e.g., ordering-service) should follow this kind of internal structure:

ordering-service/

├── src/

│ ├── main/java/com/yourorg/ordering/

│ ├── resources/

│ │ └── application.yml

├── test/

├── build.gradle / pom.xml

├── README.md

├── scripts/ # Kafka test scripts or DB init

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