

## Status Report - Assignment 02 – Group 42

Requirement	Status	Notes
Secure API Gateway	✅ Done	API Gateway implemented as the central entry point for all services. Keycloak configured for secure authentication with role-based access.
Role-Based Access Control	✅ Done	Only authorized staff members can access the ApprovalService through Keycloak role management.
Inter-Service Communication (Kafka)	✅ Done	Kafka configured for event-based communication. BookingService publishes events to Kafka. EventService consumes booking events.
Circuit Breaker Pattern	✅ Done	Resilience4J Circuit Breaker configured for critical inter-service calls. Fallback strategies implemented.
Swagger/OpenAPI Documentation	✅ Done	Swagger integrated into each microservice.
Database Setup	✅ Done	PostgreSQL for Room and User services; MongoDB for Booking and Event services. Flyway migrations automated for PostgreSQL.
Docker Compose	✅ Done	All services containerized and orchestrated via Docker Compose. The entire environment launches seamlessly in a single command.
Postman Collection	✅ Done	Comprehensive Postman collection prepared for testing all service endpoints and demonstrating their functionality.
Postman Collection	✅ Done	All services tested with comprehensive Postman collections.
Challenges	✅ Done	Faced issues with service connections, Authorization, Ports and role-based restrictions.
Lessons Learned	✅ Done	Importance of secure APIs, fault tolerance, proper logging, and schema validation. Key insights gained on containerization and observability.