**Project Status Update - GBC\_EventBooking**  
**Project Title**: GBC\_EventBooking-GroupNo47

| **Part** | **Component Name** | **Task Description** | **Implemented? (Y/N)** | **Comments / Notes** |
| --- | --- | --- | --- | --- |
| Part 1 | Secured API Gateway | Configure Spring Cloud Gateway as the main access point for directing requests to microservices | Y | N/A |
|  |  | Set up Keycloak for authentication management | Y | N/A |
|  |  | Enable API Gateway to use Keycloak for securing all microservices | Y | N/A |
|  |  | Restrict service access to authenticated users only | Y | N/A |
|  |  | Implement role-based access control with Keycloak | N | Partial implementation; token retrieval issues encountered |
| Part 2 | Advanced Inter-Service Communication with Kafka and Schema Registry | Introduce Kafka for managing asynchronous event processing | Y | N/A |
|  |  | Ensure BookingService publishes events to Kafka | Y | N/A |
|  |  | Enable EventService to consume booking events | Y | N/A |
|  |  | Manage and register schemas in the Schema Registry | Y | Functionality was tested and implemented locally |
|  |  | Validate schema compatibility between services | Y | Compatibility checks were conducted locally |
| Part 3 | Resilience4J Circuit Breaker Pattern | Apply Circuit Breaker mechanism to key inter-service communications | Y | N/A |
|  |  | Configure Circuit Breaker in BookingService for handling RoomService availability | Y | N/A |
|  |  | Set up Circuit Breaker in ApprovalService for role retrieval from UserService | Y | N/A |
|  |  | Add fallback procedures for Circuit Breaker failures | Y | N/A |
| Part 4 | Observability with Grafana Stack | Implement Prometheus for metrics tracking and system monitoring | N/A | Requirement excluded by professor for achieving full marks |
| Part 5 | API Documentation with Swagger | Integrate Swagger for documenting individual microservices | Y | N/A |
|  |  | Aggregate Swagger documentation via the API Gateway | Y | N/A |
|  |  | Ensure API documentation is complete and user-friendly | Y | N/A |