



# BAHRIA UNIVERSITY (KARACHI CAMPUS)

Open Ended Lab 2 – SPRING SEMESTER – 2023

## (Software Design and Architecture - SEL457)

Class: **BSE 4A/B**

(Morning)

Course Instructor: **Engr Majid Kaleem**

Lab Instructor: **Engr Muhammad Rehan Baig**

**Max Marks: 6**

Student's Name: \_\_\_\_\_

Reg. No: \_\_\_\_\_

**Note:** Note: Probability of similarity is 0% copied and similar solutions will be marked as zero

### **SCENERIO:**

StoreJinnie an online store after implementation of a system to manage their inventory, orders, and shipping processes in PHASEI. Now wanted to expand their application and also wants to add automation in their system. Multiple modules will be created using different tech stack (i.e.: Programming Languages) as separate projects because multiple technical teams working on modules to rapid application development.

Following are the main Modules of this system.

- **Payments Gateways:** Multiple Payment Gateways can be integrated into the system (Stripe, PayPal, Remitly, Easypaisa, etc.). if one payment gateway fails to process payments then the process automatically transfers to another payment gateway based on countries.
- **Notifications:** Based on user visits and purchases from the system Newsletter Emails, Text and In App Notifications will be scheduled and dispatched to Users.
- **Message Queueing:** The system can handle a high volume of orders without overwhelming the processing capacity, as the orders are queued and processed asynchronously.
- **Affiliate Program:** This Module will provide Affiliate related portals and marketing data to Affiliates.
- **Extensions:** This Module will provide Exposed Endpoints for Integration with other Applications and using of system public data to third party apps.

**Q1 Implement best Suited Architecture for this application.**

**Q2 Implement best Suited Architectural Patterns and Design Patterns for this Application.**

**NOTE: Please solve the above scenario with explanations.**

\*\*\*\*\* BEST OF LUCK \*\*\*\*\*