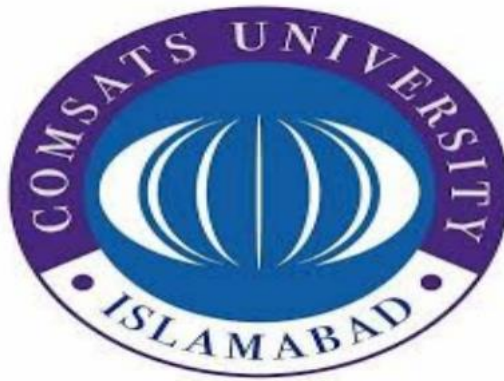# SOFTWARE DESIGN AND ARCITECTURE

Submitted to: Sir Mukhtiar Zamin

LAB MID

Submitted by: Maryam Khan
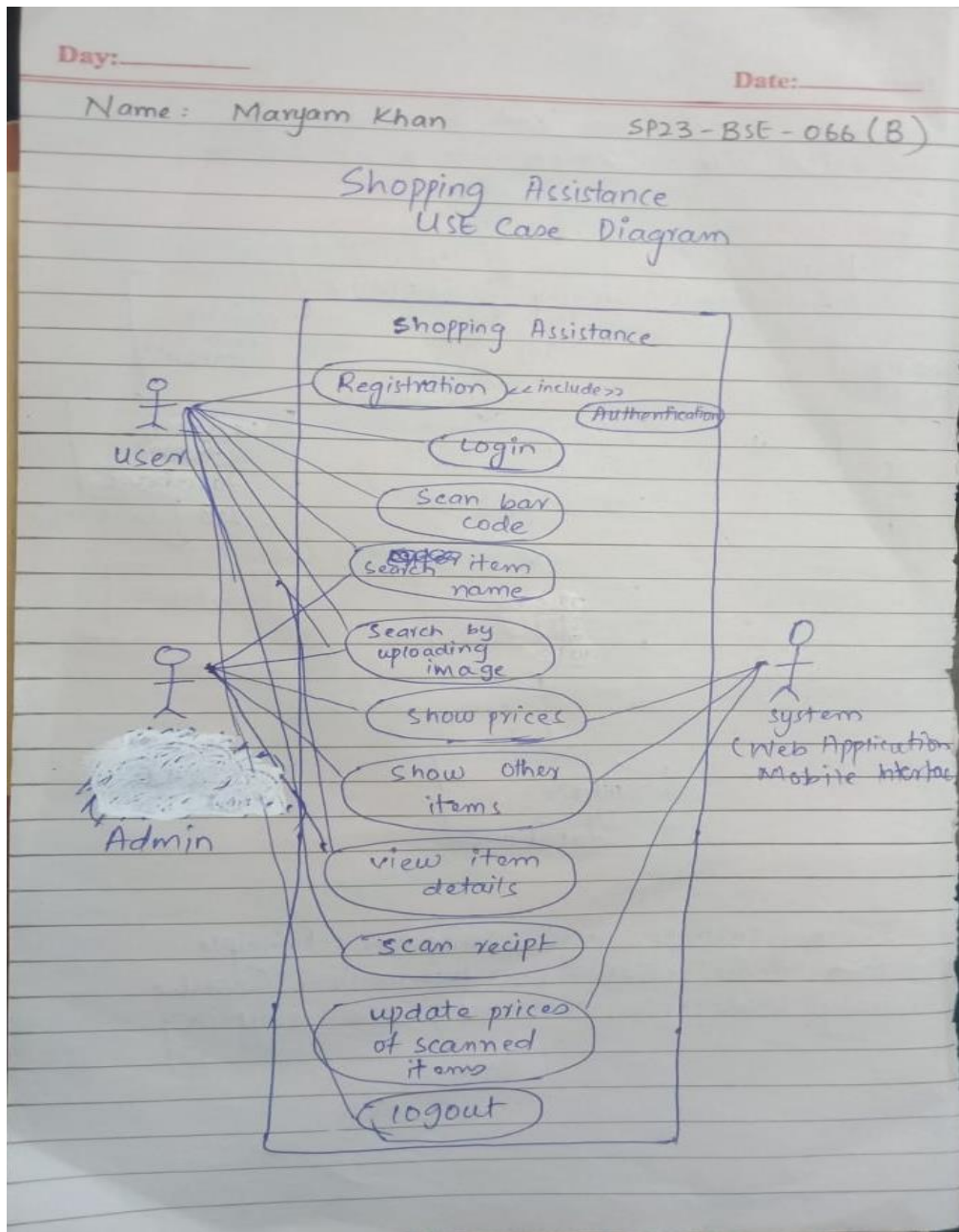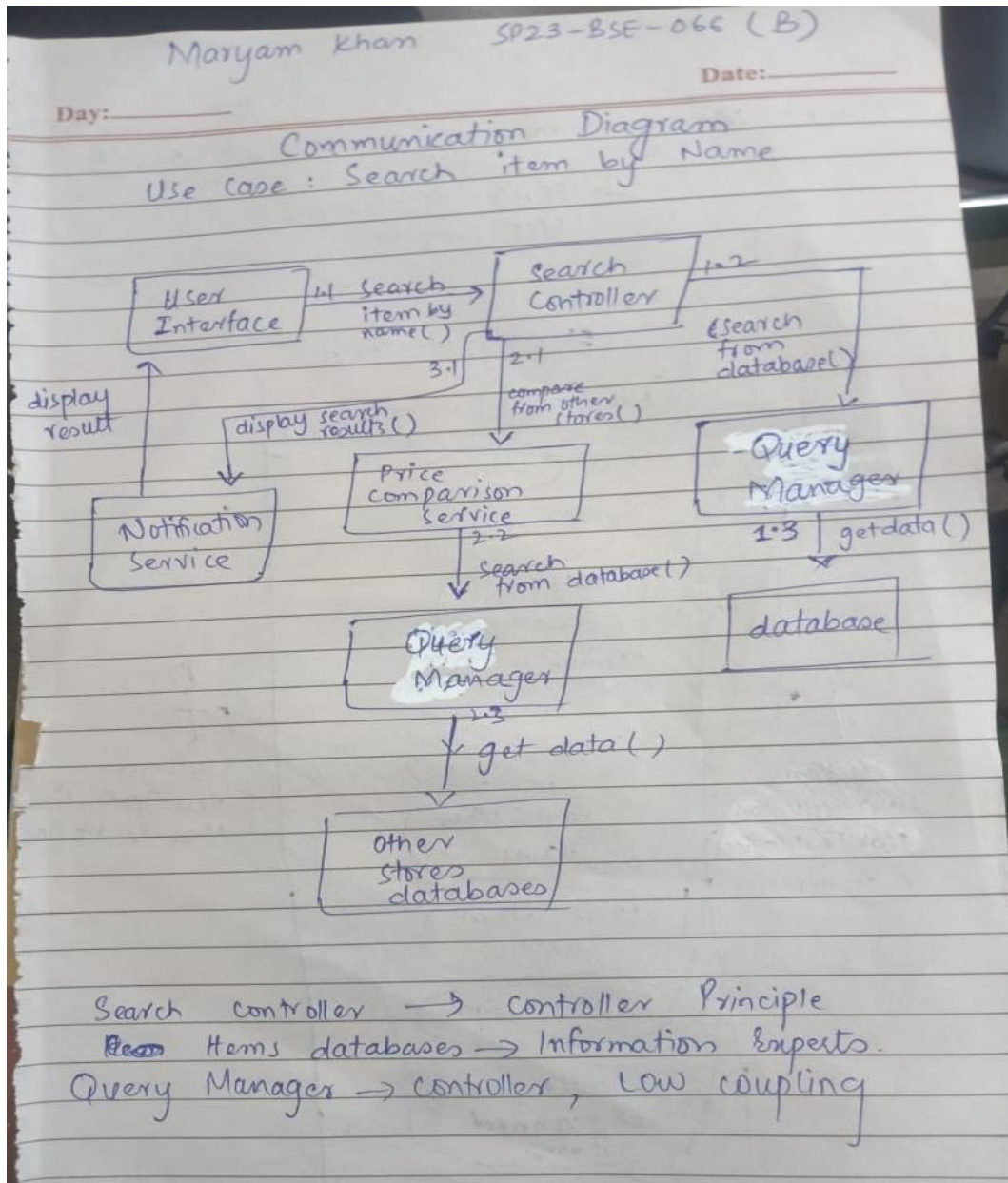## Roll no: SP23-BSE-066
Date: 22nd May 2025

DEPARTMENT OF SOFTWARE ENGINEERING
COMSATS UNIVERSITY ISLAMABAD
ABBOTTABAD CAMPUS

SHOPPING ASSIISTANCE

USE CASE: Search Item By Name

COMMUNICATION DIAGRAM

Maryam Khan   SP23-BSE-066 (B)

Communication Diagram
Use Case: Search item by Name

Search controller → Controller Principle
Items databases → Information Experts.
Query Manager → controller, Low coupling

PRINCIPLES USED IN THE DIAGRAM

Following are all the principles used in the communication diagram

Controller

Search Controller

Controller principle is used as search controller class. This class acts as a middle man between the user interface and the request initiated by the user. It forwards the request to different services.

Query Manager

This query manager class acts as an intermediate between the user and database so it is following controller principle.

Information Expert

Item Database and Other stores Databases

It is information expert because it has all the information about stored items and how to retrieve them.

Low Coupling

User interface

It is sending request to controller class and is not directly related or connected to any other class so it make the logic independent of each other.

Price Comparison Service

It compares prices from multiple sources but is not dependent on them. Chages in it does not alter any other thing.

Query Manager

This reduces direct database access and works independently, so it uses low coupling principle.

High Cohesion

Notification Service

It has only one responsibility that is to display the item.

FRONT END