HYDERABAD INSTITUTE OF ARTS, SCIENCE, AND TECHNOLOGY

Database Systems – Lab 14
Instructor: Miss Ayesha Eman
Date: 7/10/2025

Open-Ended Lab

In this final lab session, students will integrate all the skills learned throughout the semester, from data modeling and normalization to query optimization and stored procedures, into a single, open-ended mini project. The focus is on creativity, practicality, and demonstrating database proficiency through a real-world use case.

Objective

To design and implement a fully functional SQL-based system that simulates a real-world application. Students should demonstrate the use of advanced SQL features, such as joins, subqueries, transactions, triggers, views, and JSON data handling.

Task Description

You are required to design and build a small database system for any one of the following domains:

1. Online Bookstore System
2. Hospital Management System
3. University Course Registration Portal
4. Smart Inventory Management System
5. Student Attendance and Analytics System

Each system should contain at least 3–4 related tables with meaningful data. The system must include stored procedures, triggers, and at least one JSON-based operation.

Deliverables

1. SQL script containing all CREATE, INSERT, and SELECT statements
2. Screenshots of query results
3. A short summary report (1 page) explaining your project design, objectives, and conclusions

Learning Outcomes

- Ability to design and implement complete SQL-based solutions
- Understanding of integrating database concepts in real-world applications
- Experience with query optimization and JSON data handling

Instructor Signature: _____

Date: _____