# Department of Computing

**CS 213: Advanced Programming**

**Class: BSCS 5 AB**

# Lab 6: Persistent e-Cafe

**Date: November 2nd, 2017**

**Time: Thursday (10:00-12:50 & 14:00 – 16:50)**

# Instructor: Fahad Ahmed Satti

# 

# Lab 6: Persistent e-Cafe

## Introduction

In this lab the students have to update their own implementation of the e-cafe from lab 2, using JDBC to achieve persistent storage.

## Objectives

After performing this lab students will be able to understand:

* Separation of concerns
* Change Management
* Data Management API (JDBC)

## Tools/Software Requirement

* Solutions should be made using Java and JDBC, only.
* You can take help from internet but remember **no plagiarism.**

**Description**

The management at the new café wants to use a persistent storage mechanism to keep track of sales made at the end of each month. In this regard, you are to design a Persistent Data Management layer for the application you made during lab 2.

Start by creating an EERD, with all the entities and their relationships. Implement this EERD in a relational database. Convert all entities to Model Classes (Simple data containers with attributes, encapsulation and other auxiliary methods for each instance). Create a Data Access Object (DAO) layer where each class should operate on a particular entity or a set of related entities, providing services such as search the entity table for a tuple, or insert a new tuple, so on so forth.

Create the Business Object (BO) layer where each class will contain the methods corresponding to the business requirements of the application.

Create an interface (CLI based or graphical) for the user to perform different operations. Allow the user to generate a formatted file with selected subset of the data.

Finally, at all critical points, where Data is being manipulated (look for any insert, update or delete queries) log the event, the username, and the time. For logging, you can either use a table in your DB or put all logs in a file.

Each student must, individually build the complete application on their own. Students must upload their solutions on LMS to qualify for evaluation.

**Lab Task**

* Add a persistent layer to the e-café, you made in lab 2.
* If you haven’t done lab 2, now is a good time to start.
* Create a DB.
* Use separate layers (packages) as directed above.
* Allow the user to generate a formatted file with selected subset of the data.
* Create an interface for the user.
* Log critical events in your application.
* Ensure your implementation is correct by checking the requirements from the previous Unit Tests.
* Ensure the authentication system works with the help of a new unit test.

## Deliverables

* Each submission is individual with the following composition:
  + Source Code
  + Unit Tests
  + Documentation(Introduction, Approach, Design, How to Run and Analysis)
  + Link to the public repo on GitHub
* Convert your submission files into a zip folder and name it as given below, finally upload the zip folder to LMS.
  + Name – Registration No. – Section

## Grade Criteria

This lab will be graded on the following rubric: 