# Department of Computing

**CS213: Advanced Programming**

**Class: BSCS – 6C**

# Lab 8: Database Connectivity

**Date: November 16, 2018**

# Time: Friday 2:00 PM – 5:00 PM

# Instructor: Dr. Abdul Ghafoor

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# Lab 8: Development of a Data Driven Application using Spring Framework

## Introduction

In this lab, students have to design, develop, and test a database application to store person’s information, update person’s record and fetch Person information against a person id. In order to implement these requirements, student has to use spring framework and maven project structure. The client application will also provide feature to delete person against an id.

## Objectives

* Understand Spring framework
* Implementation of Dependency Injection feature
* Database handling through spring framework

## Tools/Software Requirement

* Solutions should be implemented using Java in maven project.

**Description**

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

* Any exceptions or errors leading to non-execution of submitted code.
* Failure to upload the solution on LMS.
* Failure to submit original code.
* Failure to explain the submission, during viva.

**Lab Task**

Develop a java based application to store person’s information in persistent storage. In this you have to create a database name identity and then create a table Person which has following attributes:

*int id;*

*varchar name;*

*varchar fatherName;*

*varchar organization;*

*varchar mobile;*

*varchar username;*

*varchar password;*

Your spring application will get configuration parameters like url, password and username from configuration properties. After that spring framework will create session factory object which will be injected into the DAO class. The DAO class implements save, update, delete and get functions to store, update, delete and retrieve person’s information from database table. Regarding design of application, I would recommend that you should create following classes and configurations:

**Person:** Used to keep information about a person

**BDSessionHandler:** manages autowired sessionFactory object.

**DAO:** used to implement various database functions like save, delete, update and get. Each function will throw respective exception

**SpringMain:** A main class which will call various functions to complete lab work. This will be used to get input and display output about a person.

**Note**: In order to use a maven pom file for handling dependencies, you have to add dependences in the it uploaded on LMS dependences.xml .

## Deliverables

* Each submission is individual with the following composition:
  + Source Code
  + README.txt (Introduction, Approach, How to Run)
* 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 is graded. Min marks: 0. Max marks: 10.

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| --- | --- | --- |
| **Activity** | **Minimum** | **Maximum** |
| Documentation with clearly defined understanding of the lab task and approach | 0 | 2 |
| Code clarity with clean, formatted and commented code. | 0 | 3 |
| Functionality | 0 | 3 |
| Viva | 0 | 2 |
| **Total** | **0** | **10** |