Sukkur Institute of Business Administration University

Department of Computer Science

Object Oriented Programming using Java

BS – II (CS/AI/SE)

Spring-2024

Lab # 13: Let's learn about Exception handling

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Objectives

After performing this lab, students will be able to understand:

- MySQL and Connectors
- JDBC
- JDBC with GUI

Pre Requisite

Before we actually start JDBC, You must have these things installed on your PC.

1. **DBMS (In our case, MySQL)**

   https://dev.mysql.com/downloads/installer/ (Installer link)

   https://dev.mysql.com/doc/refman/8.0/en/windows-installation.html (Installation Steps)

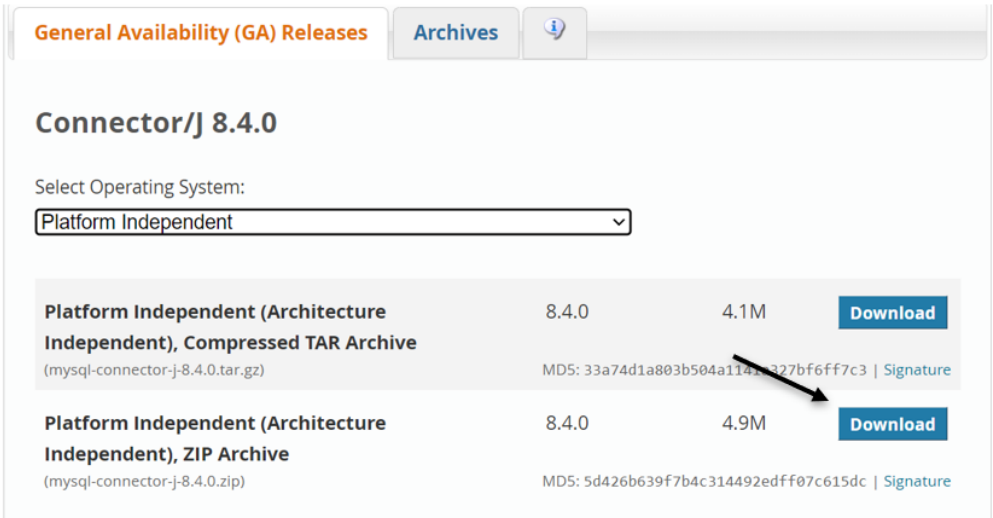
   For your convenience, I have shared a recording that shows the steps to install MYSQL on your machines. And getting started with first jdbc project.

   https://www.youtube.com/playlist?list=PLRH4SPkZ-XBoL5xULo70igLS96O7CFcAV

2. **Java connectors (JDBC Drivers)**

   https://dev.mysql.com/downloads/connector/j/

   Open this link, and choose platform independent from dropdown menu and download the pointed file.



At the end, you will get jar files for drivers. To connect java application with the mysql database, **mysqlconnector.jar** file is required to be loaded.

JDBC getting started

To connect Java application with the MySQL database, we need to follow 5 following steps.

In this example we are using MySql as the database. So we need to know following informations for the mysql database:

1. **Driver class:** The driver class for the mysql database is "**com.mysql.cj.jdbc.Driver**"

2. **Connection URL:** The connection URL for the mysql database is **jdbc:mysql://localhost:3306/MyStore** where jdbc is the API, mysql is the database, localhost is the server name on which mysql is running, we may also use IP address, 3306 is the port number and MyStore is the database name. We may use any database, in such case, we need to replace the MyStore with our database name.

3. **Username:** The default username for the mysql database is **root**.

4. **Password:** It is the password given by the user at the time of installing the mysql database. In this example, we are going to use root as the password.

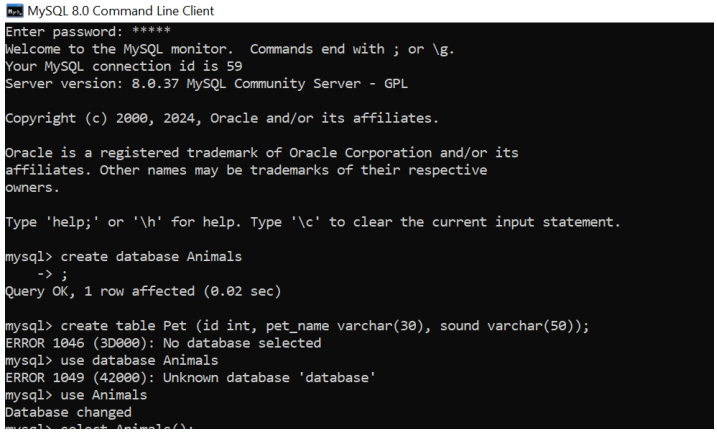
https://www.youtube.com/playlist?list=PLRH4SPkZ-XBoL5xULo70igLS96O7CFcAV

Watch this playlist for the implementation

Let's first create a table in the mysql database, but before creating table, we need to create database first. For that you may open MYSQL client and follow the steps

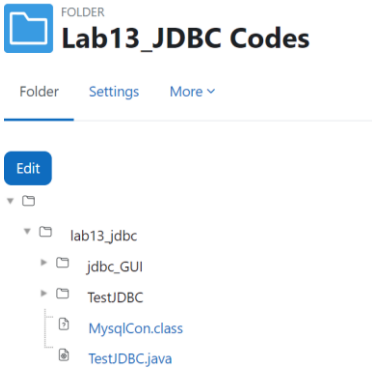
```
create database lab;

use lab;

create table emp(id int(10),name varchar(40),age int(3));
```

Example



Hands-on practice

Please follow the class instructions and examples provided to you via e-learning to clarify the topic.



Note:

If you are not using any IDE then you need to follow following steps:

1. Download mysql-connector.jar file.
2. Move it(jar) to your project directory where main class exist.
3. Run command `javac MysqlCon.java`
4. Run command `java -cp ".;mysql-connector.jar" MysqlCon`

Lab Task

Exercise 1

Create a program to connect with MySQL database. You need to create a database and using that database, create a student table with (id, name, phone, semester, cgpa) attributes.

You need to create a GUI application where you need to add CRUD (Create, Read, Update & Delete) operations. All operations should be done with created student in database.