

MySQL Week 4 Exercises

Background

We have been developing a menu-driven application that demonstrates how to perform CRUD (Create, Read, Update, Read) operations on a DIY project database. Thus far, we have learned how to create a connection to a MySQL database and how to insert records into a table. In this section, we will apply our knowledge of querying data to list all projects without project details, and to list a single project with all details.

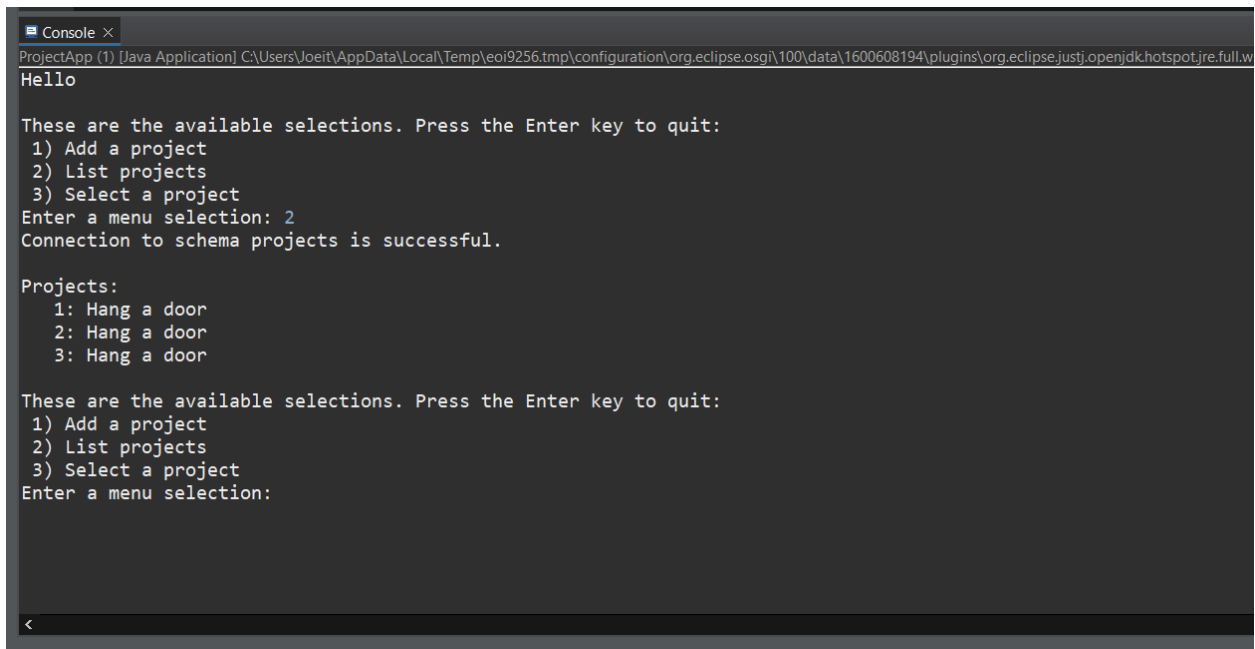
Objectives

In these exercises, you will expand the menu application to list all projects (name and ID). Then, you will write code to select a project to edit. This will involve returning a selected project along with all project details. This will further our pursuit of implementing CRUD operations on database tables.

In these exercises, you will:

- Hone your SQL query skills by writing SQL statements to fetch a `List of Project` records.
- Learn how to perform multiple queries in a single transaction.
- Write an inner join to fetch `category` rows related to a `project` row.
- Use an `Optional` to either return a `project` record or to throw a custom `Exception`.
- Practice writing Lambda expressions both to list the projects and to throw a custom `Exception` from an `Optional`.

Screen Shot 1. Showing the Project drop down works.



```
Console x
ProjectApp (1) [Java Application] C:\Users\Joel\AppData\Local\Temp\eo9256tmp\configuration\org.eclipse.osgi\100\data\1600608194\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.w
Hello

These are the available selections. Press the Enter key to quit:
1) Add a project
2) List projects
3) Select a project
Enter a menu selection: 2
Connection to schema projects is successful.

Projects:
1: Hang a door
2: Hang a door
3: Hang a door

These are the available selections. Press the Enter key to quit:
1) Add a project
2) List projects
3) Select a project
Enter a menu selection:
```

Screen Shot 2 showing notes and materials

```
Console X
ProjectApp [1] (Java Application) C:\Users\Joel\AppData\Local\Temp\eo9256.tmp\configuration\org.eclipse.osgi\100\data\1600608194\plugin\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.17.0.4.v20220805-1047\jre\bin\java.exe (Sep 4, 2022, 4:36:37 PM) [pid: 20328]
Hello

These are the available selections. Press the Enter key to quit:
1) Add a project
2) List projects
3) Select a project

You are not working with a project.
Enter a menu selection: 3
Connection to schema projects is successful.

Projects:
1: Hang a door
Enter a project ID to select a project: 1
Connection to schema projects is successful.

These are the available selections. Press the Enter key to quit:
1) Add a project
2) List projects
3) Select a project

You are working with project:
ID=1
name=Hang a door
estimatedHours=4.00
actualHours=3.00
difficulty=3
notes=Use the hangers from Home Depot
Materials:
ID=1, materialName=2-inch screws, numRequired=20, cost=null
Steps:
ID=1, stepText=Screw door hangers on the top and bottom of each side of the door frame
Categories:
ID=1, categoryName=Doors and Windows
Enter a menu selection:
```

Screen Shot 3 Showing error handling

```
124
125      return Objects.isNull(input) ? -1 : input;
Console X
ProjectApp [1] (Java Application) C:\Users\Joel\AppData\Local\Temp\eo9256.tmp\configuration\org.eclipse.osgi\100\data\1600608194\plugin\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64.17.0.4.v20220805-1047\jre\bin\java.exe (Sep 4, 2022, 4:37:36 PM) [pid: 13352]
Hello

These are the available selections. Press the Enter key to quit:
1) Add a project
2) List projects
3) Select a project

You are not working with a project.
Enter a menu selection: 3
Connection to schema projects is successful.

Projects:
1: Hang a door
Enter a project ID to select a project: 99
Connection to schema projects is successful.

Error: java.util.NoSuchElementException: Project with ID = 99 does not exist. Try Again.

These are the available selections. Press the Enter key to quit:
1) Add a project
2) List projects
3) Select a project

You are not working with a project.
Enter a menu selection:
```

Github Repo:

<https://github.com/JoelItalics/Promineo-Tech-HWs/tree/main/Week10>