DBS project 1 Report

Personal_Info_System

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Project's object

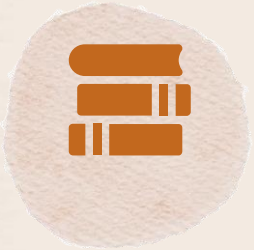
Project's object

Craft a Java application that utilizes JDBC to establish a connection with a live database. The application should be capable of handling both data and metadata operations, functioning as a straightforward database management utility for database administrators. It should be able to accept SQL commands and present the outcomes in a well-organized textual format.

02

JDBC Brief Intro

JDBC Brief Intro



JDBC API serves as a Java-based architecture that enables communication with various types of structured data, predominantly in relational databases. It addresses three key programming functions within Java applications. Comprising four essential elements: the JDBC API, which allows Java applications to engage with relational data; the JDBC Driver Manager, that facilitates connections between Java applications and JDBC drivers; the JDBC Test Suite, which aids in confirming the compatibility of JDBC drivers with certain programs; and the JDBC-ODBC Bridge, enabling JDBC connectivity via ODBC drivers. The process of utilizing JDBC in programming encompasses several stages: initiating a connection to a database or other data sources, dispatching queries and updates, and subsequently retrieving and managing the database's reactions to these requests.

03

JavaFX Brief Intro

JavaFX Brief Intro

JavaFX is a Java-based framework designed for creating and delivering dynamic user interfaces, particularly for desktop applications and recently expanded to mobile and embedded systems. It encompasses a comprehensive set of tools for building rich internet applications (RIAs) that can run across a variety of platforms. JavaFX addresses the need for modern UI development with three primary components: the JavaFX SDK, which provides a rich set of UI controls and tools for developers; the JavaFX Runtime, which enables the execution of JavaFX applications; and the JavaFX Scene Graph, which facilitates the rendering of complex UIs with animations and graphics. The process of developing with JavaFX involves several stages: designing the user interface using JavaFX's extensive library of UI components, coding the application logic, and then deploying the application across different platforms.

04

Project Introduction

Project Introduction

The Personal Information Management System is a simple yet efficient database application developed to manage personal information such as names, ages, genders, and addresses. Built using Java, JDBC, and JavaFX, this system provides a user-friendly interface for adding, viewing, updating, and deleting personal data records in a MySQL database.

Some Key Features of the Project

CRUD Operations

The system supports full CRUD (Create, Read, Update, Delete) functionalities:

User-Friendly Interface

The system uses JavaFX to create an intuitive and easy-to-navigate graphical user interface (GUI), allowing users to interact with the database through simple form inputs and buttons.

Error Handling and Data Integrity

The system ensures robust error handling to manage database exceptions and maintain data integrity during transactions.

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Project Development Environment

Development Environment

- **JDK**: Oracle JDK, Version 17.0.10
- **Database**: MySQL, Version 8.0.40
- **JDBC Driver**: Version 8.0.25
- **IDE**: IntelliJ IDEA Community Edition 2023.3.5
- **Operating System**: Windows 11

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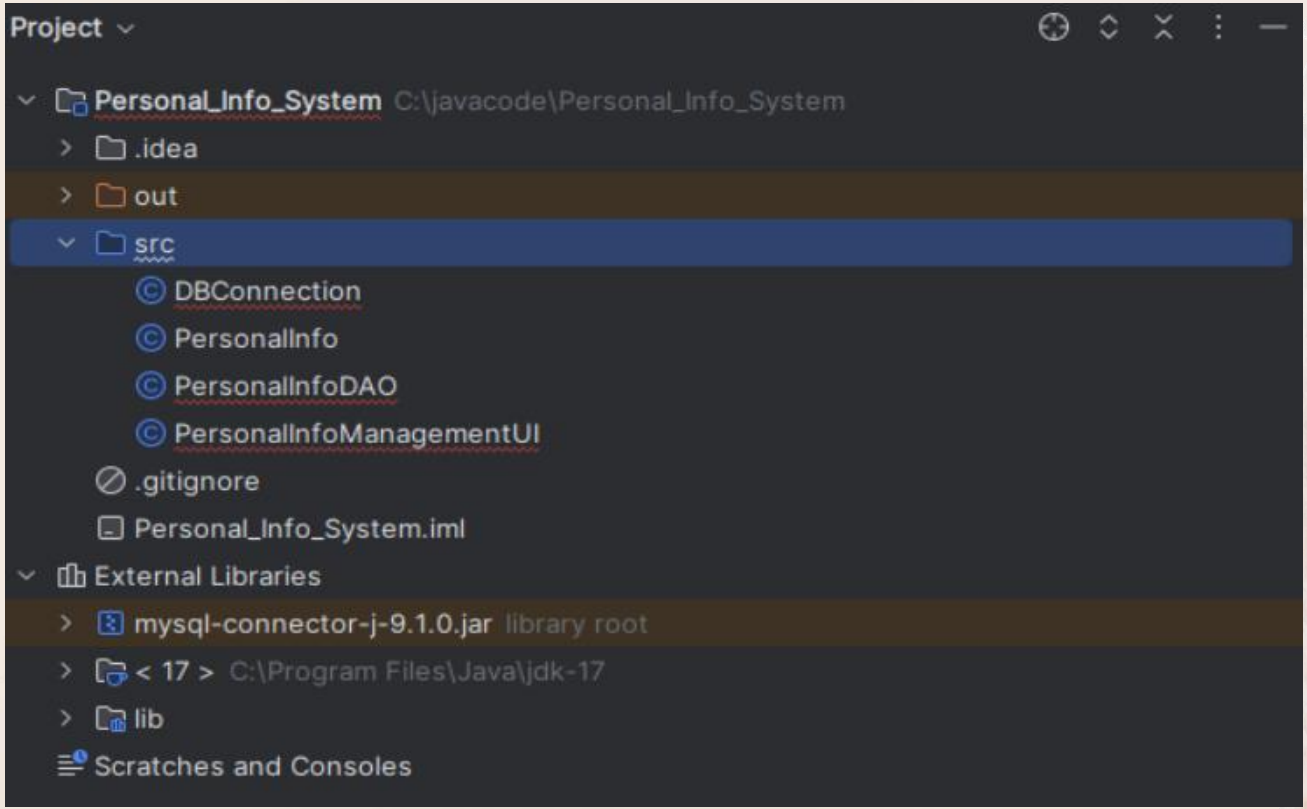
File structure

File structure



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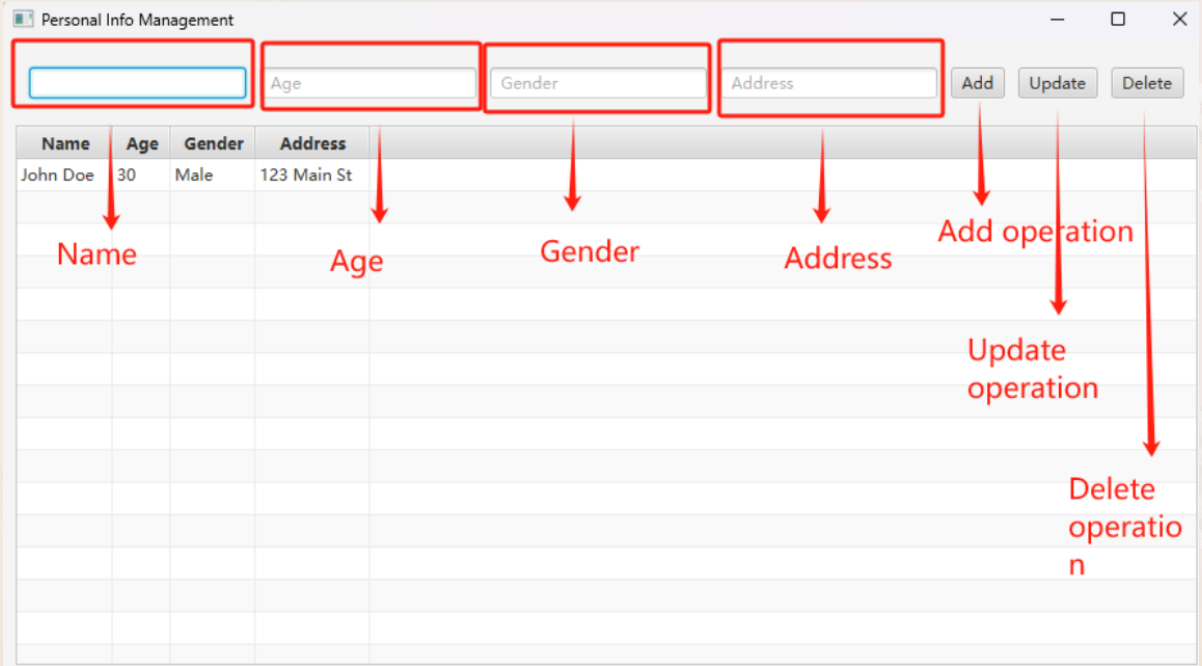
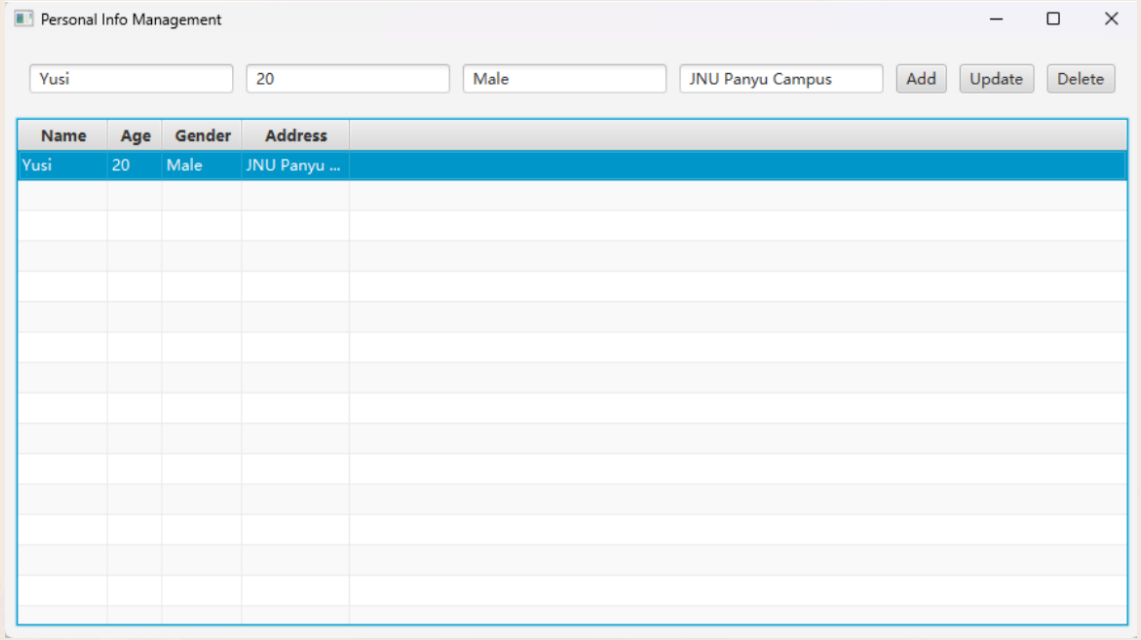
Usage Guide

Usage Guide

When the core java program is loaded, it will connect directly to our local MySQL database, which can be directly added, deleted, changed and checked (Tips: we have pre-placed the username and password in other files to connect to the database).

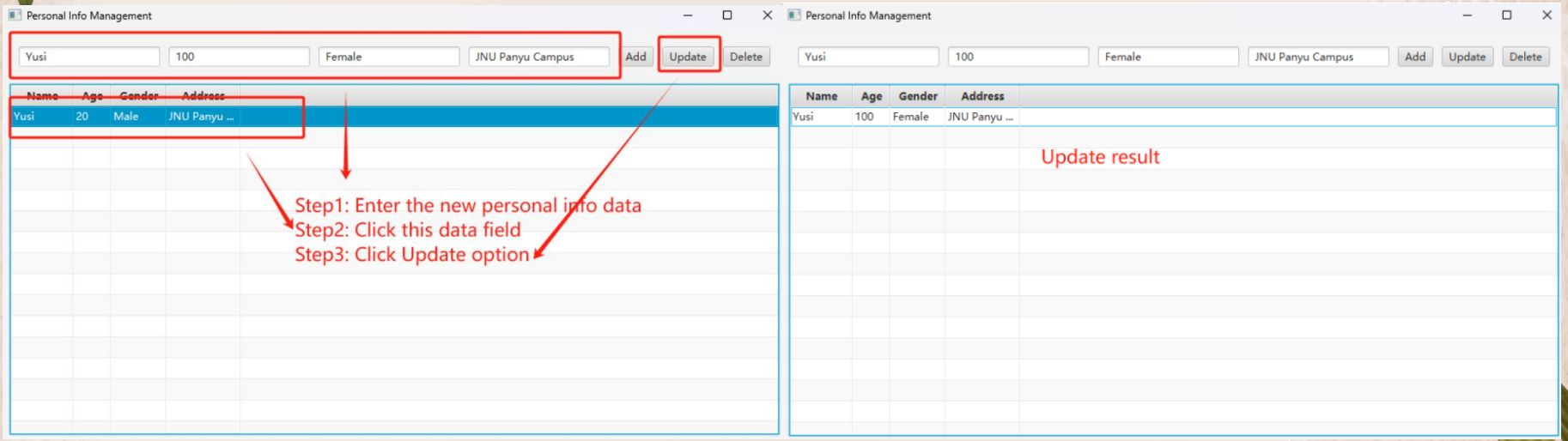


Usage Guide



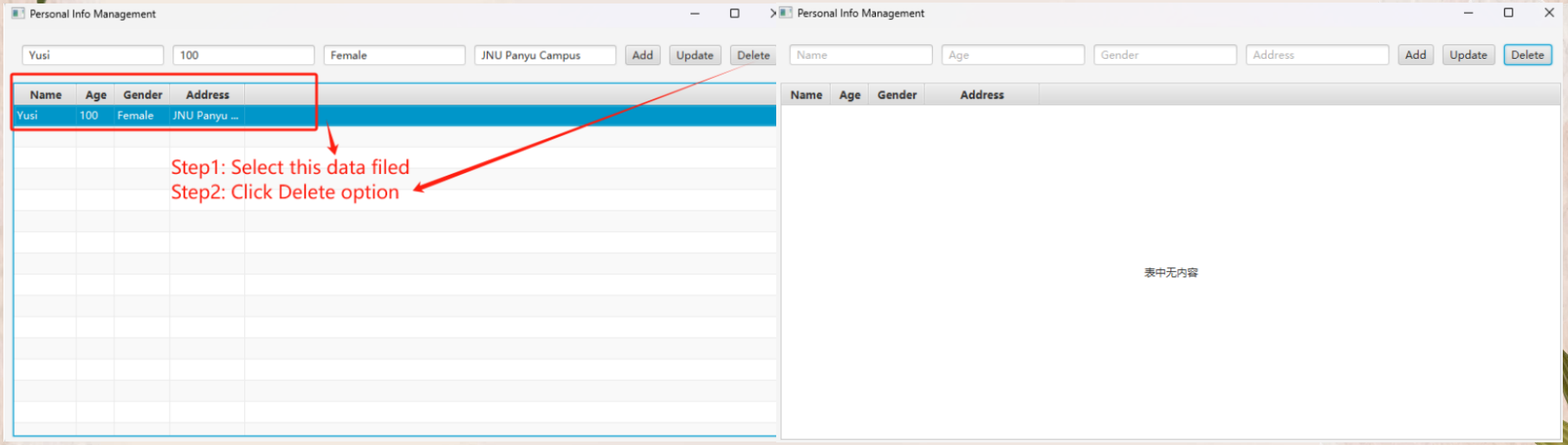
Add operation

Usage Guide



Update operation

Usage Guide



Delete operation

THANKS!

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