DBMS

CS 221: Programming II

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Introduction

A Computer Database is a structured collection of records or data that is stored in a computer system. On the other hand, a Database Management System (DBMS) is a complex set of software programs that controls the organization, storage, management, and retrieval of data in a database. DBMS are categorized according to their data structures or types. The DBMS accepts requests for data from the application program and instructs the operating system to transfer the appropriate data

This Guide here is to show how we managed to implement the code and there is a user Guide that shows how to use the program.

First we included the design Architecture supported with UML diagrams then there is a detailed sections to show how to use the program

Design Architecture

1. Using Composite with hierarchy of the data base
2. Using Factory design pattern with validation.
3. Using Strategy design pattern with parsing actions.
4. Using Adaptor design pattern with different interfaces
5. Using singleton design pattern with database root

Implementation

By implementing interface named with **IValidator** by an abstract class named with **Validation** then extend that class by different validation classes and a factory class named with **ValidationFactory** we implemented Factory design pattern.

UML Diagrams

Here is the class diagrams for different implemented design patterns.

1. Factory method design pattern

User Guide

About this Guide

This guide is divided into the following sections:

- Section 1 : "Introduction"
- Section 2 : "Describing the software" gives an overview of the key features and software Environment.
- Section 3 : "How to use this software"

Who should use it

This guide is intended for users of different degrees of knowledge and experience with this program.

This guide assume that you have some knowledge of the operating system.

Typographical Conventions

This guide uses the following typographical conventions :

- Command and option names appear in **bold type**.
- Actions such as mouse actions appears in *italic type.*

1. Introduction

This guide is to define the functionality and features of this program and teach the user how to use it and do specific things that he want.
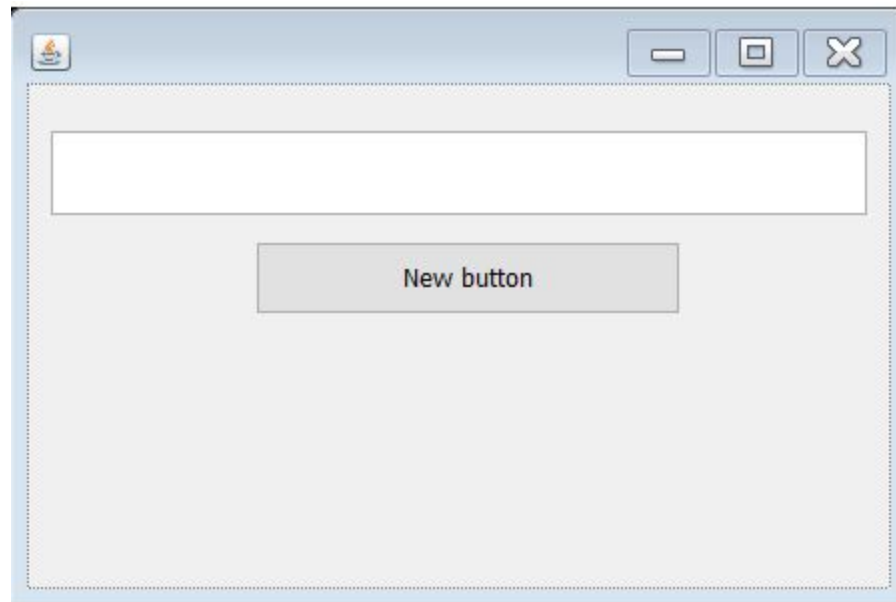
2. Overview

This program allows you to :

- Create database
- Create table
- Drop database
- Drop table
- Select table
- Insert into table
- Delete feom table
- Update table

3. User Interface

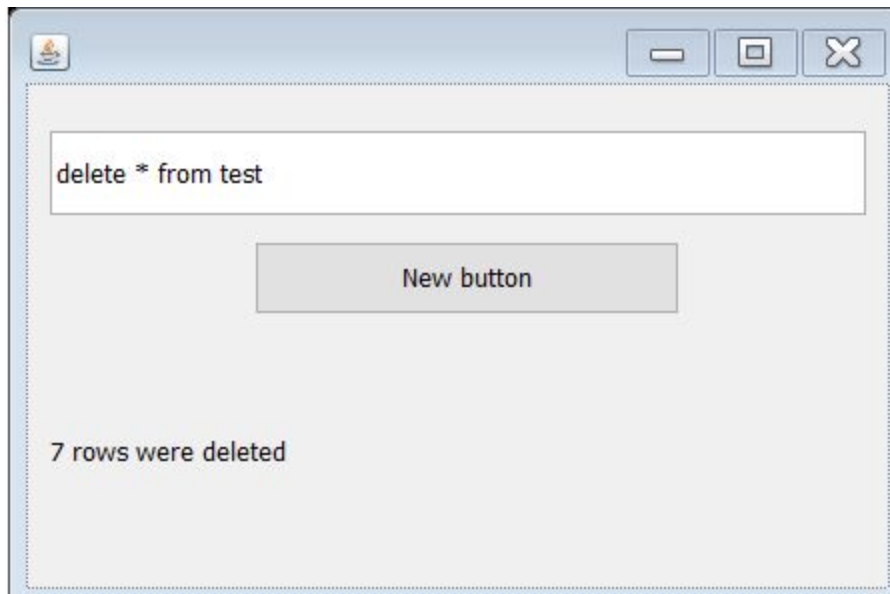When you open the program, the following window will appear

Now, we will explore this Window. The following figure demonstrate the different parts of this window.
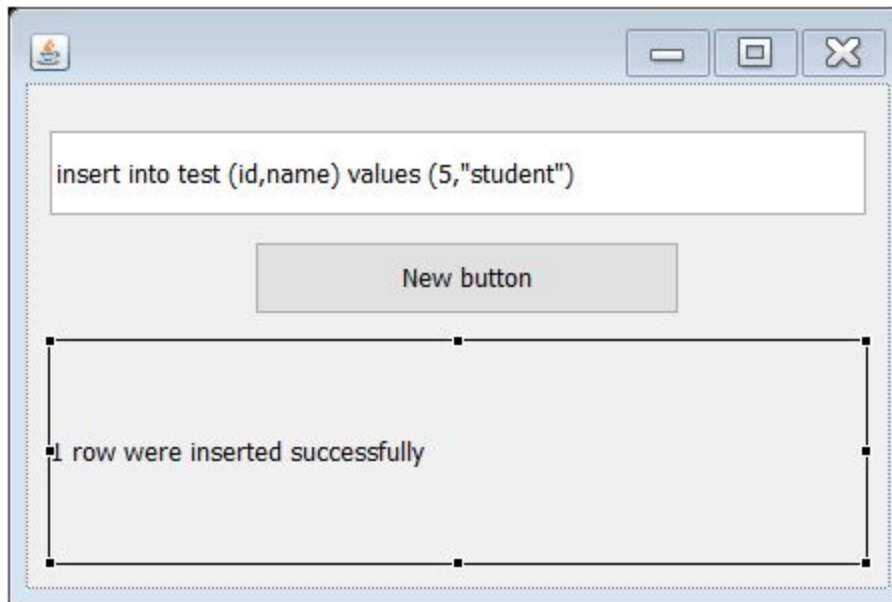
4. Instructions

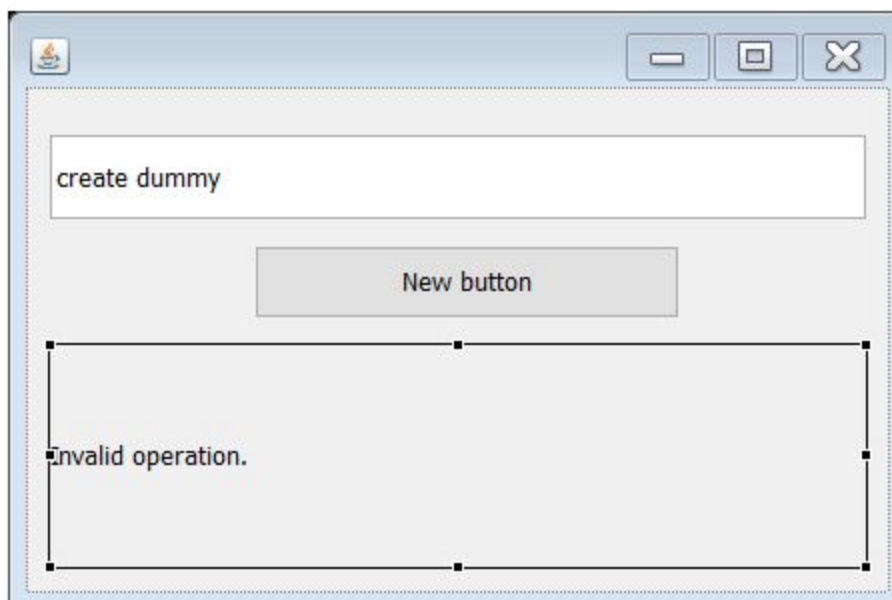4.1 : you just have to enter the query on the textField and the result will apper

Exambles :

Delete :

Insert :

insert into test (id,name) values (5,"student")

New button

1 row were inserted successfully

Invalid :

create dummy

New button

Invalid operation.

References

- http://www.klariti.com/technical-writing/User-Guides-Tutorial.shtml
- https://www.tutorialspoint.com
- https://sourcemaking.com/design_patterns
- http://www.java2s.com/
- https://docs.oracle.com/en/