VICTORIA
UNIVERSITY

MODULE NAME: OBJECT ORIENTED PROGRAMMING

COURSE WORK

Github link: https://github.com/KodoDushimimana/javacw/tree/main/ERS

GROUP MEMBERS

NAMES	**REGISTRATION NUMBER**
NSADAH MICHEAL	VU-BIT-2411-1474-EVE
AHABWE PROSSY PROMISE	VU-BIT-2407-1248-EVE
AYIKO SAMUEL	VU-BIT-2407-0870-EVE
BYOMERE ISAAC	VU-BIT-2407-2752-EVE
MALINGA SIMON	VU-BIT-2407-1055-EVE
MWESIGWA IVAN	VU-BIT-2407-0826-EVE
RUGUMAYO MICHEAL TENDO	VU-BSF-2407-08O8-EVE
DUSHIMIMANA OLIVIER	VU-BIT-2407-2538-EVE
BWIRE GILBERT	VU-DIT-2407-0316-EVE
PHILLIP SSEMPEREZA	VU-BCS-2407-0707-EVE

VICTORIA
UNIVERSITY

Project 2: GUI & Database Integration in Exhibition Registration System

Project Overview

The Exhibition Registration System (ERS is a Java-based desktop application developed to digitize and streamline the registration process internally at the Faculty of Science and Technology at Victoria University for an exhibition.

The system provides a user-friendly graphical interface that allows participants to enter their details, and administrators to manage these records efficiently.

This system supports CRUD (Create, Read, Update, Delete) operations and ensures that participant information such as registration ID, name, faculty, contact details, and project information is properly captured and stored in a backend database i.e OpenOffice base. Java Swing is used for the GUI, while JDBC is used for database connectivity. The application follows **Object-Oriented Programming (OOP)** principles for scalability and maintainability.

System Features

- Register: Allows entry of new participant data and saves it to the database.
- Update: Modifies existing participant details in the system.
- Delete: Removes participant records from the database.
- Exit: Closes the application interface safely.

Advantages of the ERS

- User-Friendly Interface**: Clean and intuitive layout built using Java Swing.
- Efficient Participant Management**: Handles participant registration and updates with ease.
- Secure Access**: Includes basic login functionality to restrict access.
- Structured Codebase**: Built using OOP principles for clear code separation and ease of maintenance.
- Reusable Components**: DAO and model classes can be reused in similar systems.

Object-Oriented Programming (OOP) Principles in Use

OOP Principle	Implementation Example	Purpose
Encapsulation	Student class encapsulates participant details	Protects data by restricting access through getter/setter methods
Abstraction	recordsDAO handles all database interactions	Hides database logic from the GUI, promoting separation of concerns
Inheritance	Not explicitly used	Not applicable in this project
Polymorphism	Action listeners for buttons (event handling)	Allows different operations using similar method names or interfaces

Key Classes

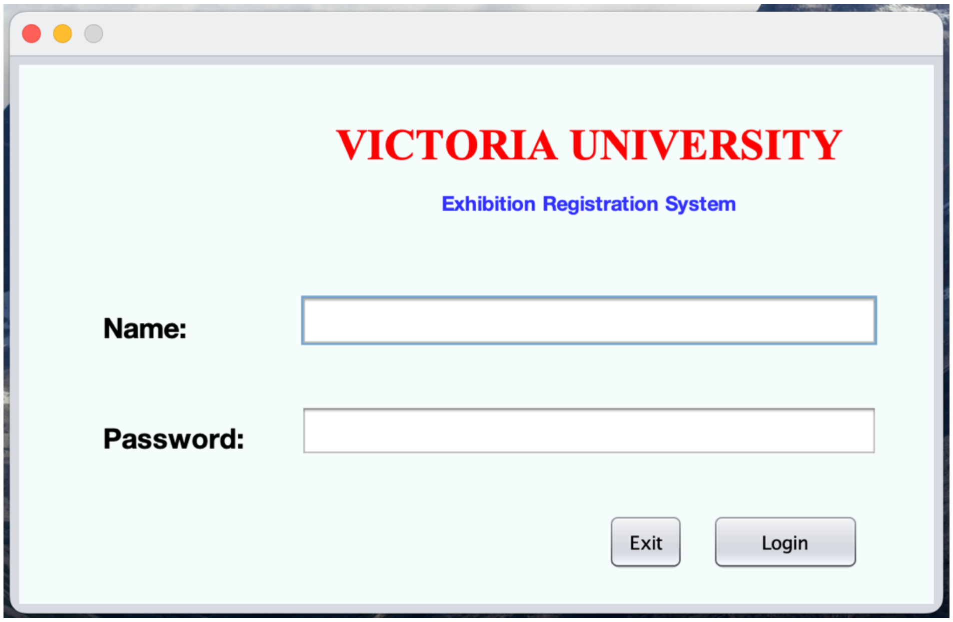
- **Student.java**: A model class representing a participant, encapsulating their personal and exhibition details.
- **recordsDAO.java**: A Data Access Object that executes SQL operations, abstracting the database layer from the business logic.
- **Login.java**: Provides a simple login mechanism to control access to the system.
- **homepage.java**: The main graphical user interface where users can interact with the system through buttons and input fields.
- **Ers.java:** The entry point of the application that initializes and displays the GUI.

Screenshots

Login page

Username: Admin

Password: Admin@123



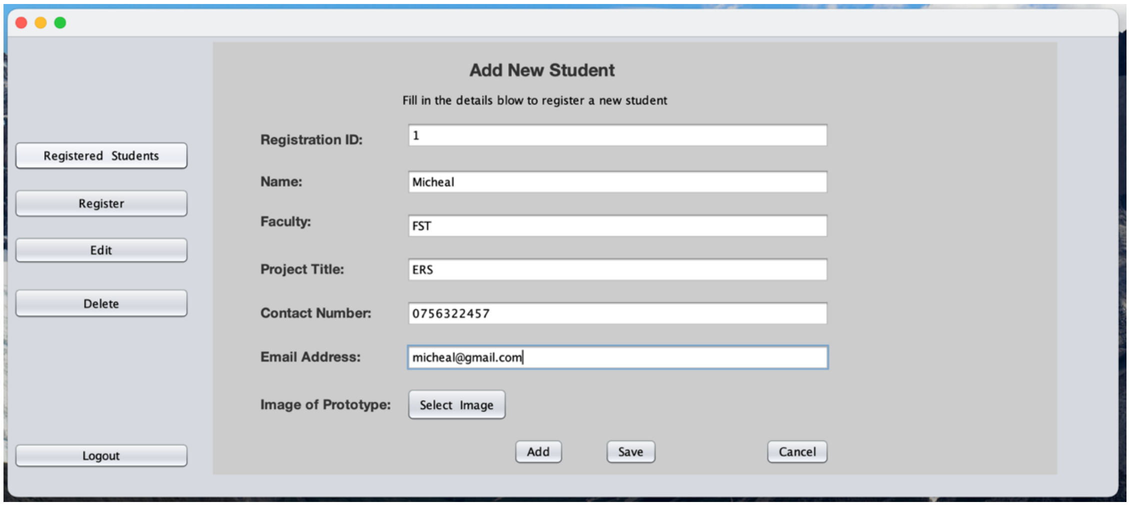
VICTORIA UNIVERSITY

Exhibition Registration System

Name:

Password:

New student registration in card layout

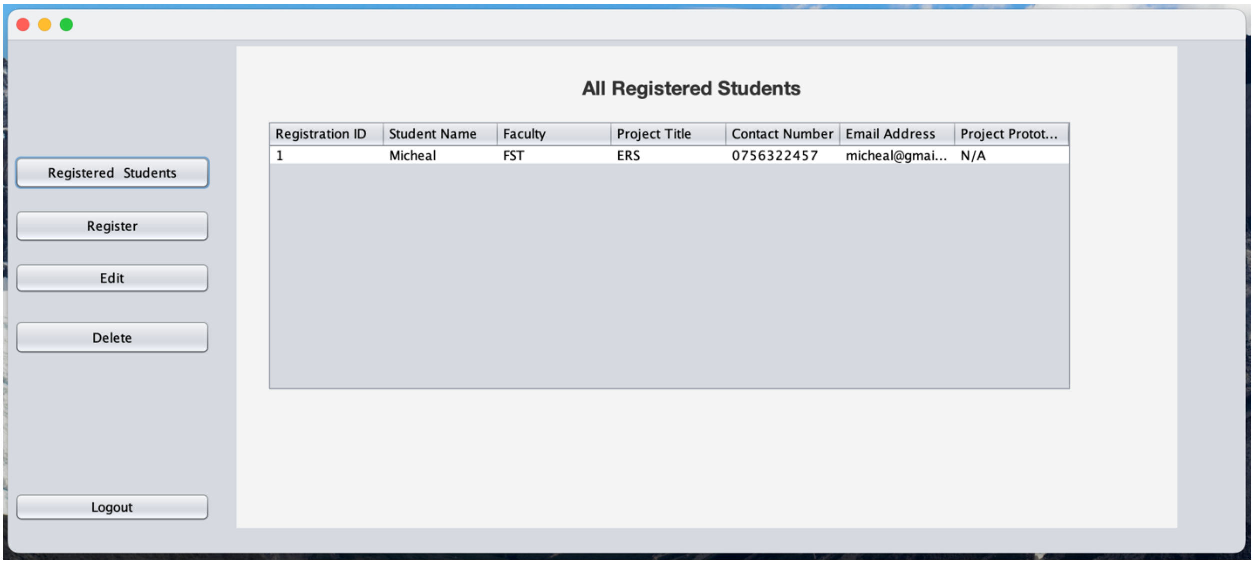


Add New Student

Fill in the details blow to register a new student

Registration ID:	1
Name:	Micheal
Faculty:	FST
Project Title:	ERS
Contact Number:	0756322457
Email Address:	micheal@gmail.com
Image of Prototype:	Select Image

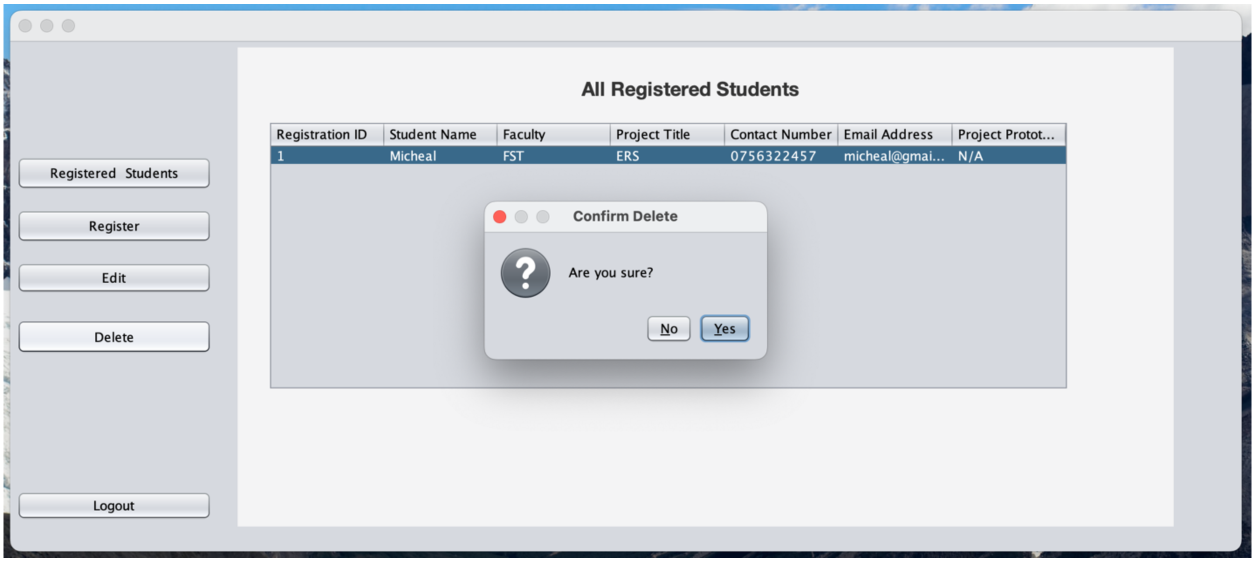
Registered student display



All Registered Students

Registration ID	Student Name	Faculty	Project Title	Contact Number	Email Address	Project Protot...
1	Micheal	FST	ERS	0756322457	micheal@gmai...	N/A

Deleting a student record



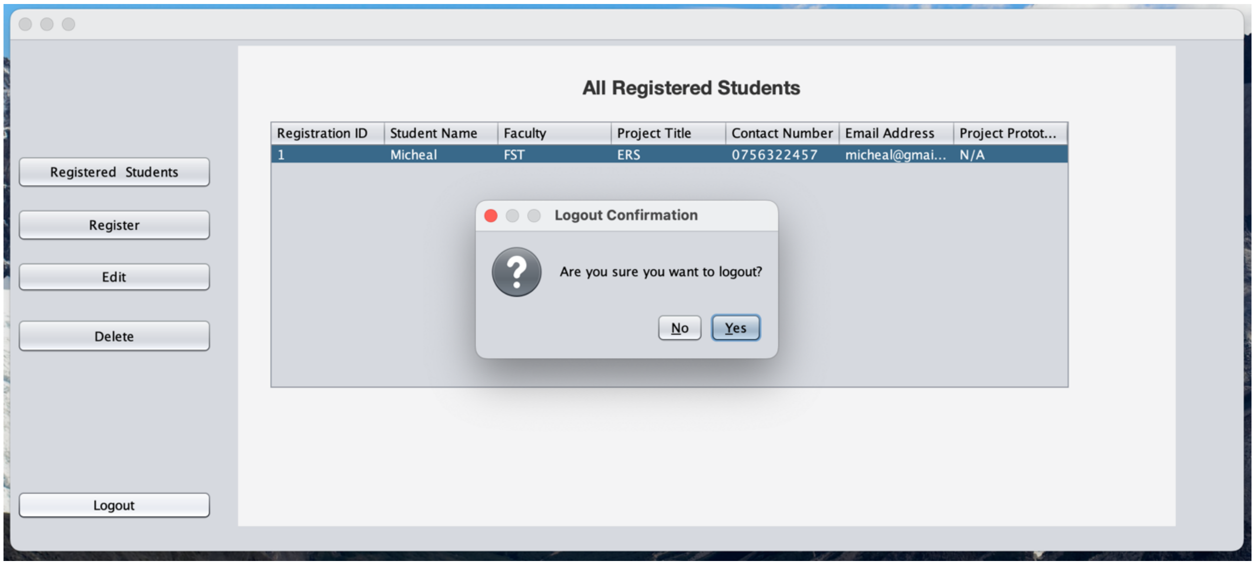
All Registered Students

Registration ID	Student Name	Faculty	Project Title	Contact Number	Email Address	Project Protot...
1	Micheal	FST	ERS	0756322457	micheal@gmai...	N/A

Confirm Delete

Are you sure?

Logging out of the system



All Registered Students

Registration ID	Student Name	Faculty	Project Title	Contact Number	Email Address	Project Protot...
1	Micheal	FST	ERS	0756322457	micheal@gmai...	N/A

Logout Confirmation

Are you sure you want to logout?