Project Description: Student Management System

The Student Management System (SMS) is a Java-based application designed to efficiently manage and store information about students. The system provides a user-friendly graphical interface that allows users to input, save, and retrieve student details. The primary objective of SMS is to streamline the process of handling student data, ensuring accuracy and accessibility.

Features:

1. **User Interface:**
   ○ The SMS application features an intuitive graphical user interface (GUI) developed using Java Swing, providing a seamless experience for users.
   ○ The interface incorporates text fields, dropdowns, and buttons to capture and display student information effectively.
2. **Data Entry:**
   ○ Users can input essential student details, including name, student ID, email, phone number, and course type.
   ○ The system incorporates data validation checks to ensure that users enter complete and accurate information.
3. **File Operations:**
   ○ SMS supports two primary file operations: saving student data to a file and retrieving data from a file.
   ○ The "Save to File" functionality utilizes Java Object Serialization to store student objects in a file named "hello.txt."
4. **Error Handling:**
   ○ Robust error-handling mechanisms have been implemented to address scenarios such as empty fields during data entry.
   ○ Users are notified with informative error messages when issues arise, promoting a more user-friendly experience.
5. **Image Display:**
   ○ An image component has been integrated into the GUI to enhance the visual appeal of the application.
   ○ The system displays an image ("image.jpg") on the right side of the interface using Java's ImageIcon.

How to Use:

1. **Data Entry:**
   ○ Users can enter student information in the designated text fields.

- ○ The "Course Type" field provides a dropdown menu with options: MAJOR, NON_MAJOR, OPTIONAL.
2. **Saving Data:**
   - ○ Clicking the "Save to File" button triggers the system to save the entered student data to a file named "hello.txt."
   - ○ The system checks for empty fields and displays an error message if any are found.
3. **Retrieving Data:**
   - ○ The "Retrieve from File" button allows users to retrieve previously saved student data from the "hello.txt" file.
   - ○ The system displays the retrieved data, providing an overview of the student's details.

Components:

- **MainGUI.java:** Contains the main application logic and graphical user interface.
- **Student.java:** Defines the structure of the Student class, including fields for student information.
- **CourseType.java:** Enumerates the possible course types (MAJOR, NON_MAJOR, OPTIONAL).

Purpose: The Student Information Management System aims to simplify the process of managing student data, offering a reliable and user-friendly platform for storing and retrieving information. This project showcases proficiency in Java programming, graphical user interface design, and file handling concepts.

Note: This project assumes that an image file named "image.jpg" is available in the project directory for display purposes.

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