Source code for library management system using java swing

import javax.swing.\*;

import java.awt.\*;

import java.awt.event.\*;

import java.util.\*;

public class Library\_management extends JFrame implements ActionListener {

    private JLabel label1, label2, label3, label4, label5, label6, label7;

    private JTextField textField1, textField2, textField3, textField4, textField5, textField6, textField7;

    private JButton addButton, viewButton, editButton, deleteButton, clearButton,exitButton;

    private JPanel panel;

    private ArrayList<String[]> books = new ArrayList<String[]>();

    public Library\_management() {

        setTitle("Library Management System");

        setSize(600, 300);

        setDefaultCloseOperation(EXIT\_ON\_CLOSE);

        label1 = new JLabel("Book ID");

        label2 = new JLabel("Book Title");

        label3 = new JLabel("Author");

        label4 = new JLabel("Publisher");

        label5 = new JLabel("Year of Publication");

        label6 = new JLabel("ISBN");

        label7 = new JLabel("Number of Copies");

        textField1 = new JTextField(10);

        textField2 = new JTextField(20);

        textField3 = new JTextField(20);

        textField4 = new JTextField(20);

        textField5 = new JTextField(10);

        textField6 = new JTextField(20);

        textField7 = new JTextField(10);

        addButton = new JButton("Add");

        viewButton = new JButton("View");

        editButton = new JButton("Edit");

        deleteButton = new JButton("Delete");

        clearButton = new JButton("Clear");

        exitButton=new JButton("Exit");

        addButton.addActionListener(this);

        viewButton.addActionListener(this);

        editButton.addActionListener(this);

        deleteButton.addActionListener(this);

        clearButton.addActionListener(this);

        exitButton.addActionListener(this);

        panel = new JPanel(new GridLayout(10,2));

        panel.add(label1);

        panel.add(textField1);

        panel.add(label2);

        panel.add(textField2);

        panel.add(label3);

        panel.add(textField3);

        panel.add(label4);

        panel.add(textField4);

        panel.add(label5);

        panel.add(textField5);

        panel.add(label6);

        panel.add(textField6);

        panel.add(label7);

        panel.add(textField7);

        panel.add(addButton);

        panel.add(viewButton);

        panel.add(editButton);

        panel.add(deleteButton);

        panel.add(clearButton);

        panel.add(exitButton);

        add(panel);

        setVisible(true);

    }

    public void actionPerformed(ActionEvent e) {

        if (e.getSource() == addButton) {

            String[] book = new String[7];

            book[0] = textField1.getText();

            book[1] = textField2.getText();

            book[2] = textField3.getText();

            book[3] = textField4.getText();

            book[4] = textField5.getText();

            book[5] = textField6.getText();

            book[6] = textField7.getText();

            books.add(book);

            JOptionPane.showMessageDialog(this, "Book added successfully");

            clearFields();

        }

        else if (e.getSource() == viewButton) {

            String[] columns = {"Book ID", "Book Title", "Author", "Publisher", "Year of Publication", "ISBN", "Number of Copies"};

            Object[][] data = new Object[books.size()][7];

            for (int i = 0; i < books.size(); i++) {

                data[i][0] = books.get(i)[0];

                data[i][1] = books.get(i)[1];

                data[i][2] = books.get(i)[2];

                data[i][3] = books.get(i)[3];

                data[i][4] = books.get(i)[4];

data[i][5] = books.get(i)[5];

data[i][6] = books.get(i)[6];

}

JTable table = new JTable(data, columns);

JScrollPane scrollPane = new JScrollPane(table);

JFrame frame = new JFrame("View Books");

frame.add(scrollPane);

frame.setSize(800, 400);

frame.setVisible(true);

}

else if (e.getSource() == editButton) {

String bookID = JOptionPane.showInputDialog(this, "Enter book ID to edit:");

for (int i = 0; i < books.size(); i++) {

if (books.get(i)[0].equals(bookID)) {

String[] book = new String[7];

book[0] = bookID;

book[1] = textField2.getText();

book[2] = textField3.getText();

book[3] = textField4.getText();

book[4] = textField5.getText();

book[5] = textField6.getText();

book[6] = textField7.getText();

books.set(i, book);

JOptionPane.showMessageDialog(this, "Book edited successfully");

clearFields();

return;

}

}

JOptionPane.showMessageDialog(this, "Book not found");

}

else if (e.getSource() == deleteButton) {

String bookID = JOptionPane.showInputDialog(this, "Enter book ID to delete:");

for (int i = 0; i < books.size(); i++) {

if (books.get(i)[0].equals(bookID)) {

books.remove(i);

JOptionPane.showMessageDialog(this, "Book deleted successfully");

clearFields();

return;

}

}

JOptionPane.showMessageDialog(this, "Book not found");

}

else if (e.getSource() == clearButton) {

clearFields();

}

        else if (e.getSource() == exitButton) {

            System.exit(0);

        }

}

    private void clearFields() {

    textField1.setText("");

    textField2.setText("");

    textField3.setText("");

    textField4.setText("");

    textField5.setText("");

    textField6.setText("");

    textField7.setText("");

}

public static void main(String[] args) {

    new Library\_management();

}

}