

Advanced Java Programming

Exp No. 17 : Mini Project

By. Vishal Bhosle

College Database System

:: Source Code ::

```
import javax.swing.*;
import javax.swing.border.EmptyBorder;
import java.awt.*;
import java.awt.event.*;
import java.time.LocalDateTime;

public class MainApp extends JFrame {

    private JPanel contentPane;
    private int loginAttempt = 0;
    private JTextField txtSearch;
    private JLabel lblStatus;
    private final static String PASSWORD = "$admin";
    private JTable table;
    private Database db;
    private JScrollPane scrollPane;

    public static void main(String[] args) {
        EventQueue.invokeLater(new Runnable() {
            public void run() {
                try {
                    MainApp frame = new MainApp();
                    frame.setVisible(true);
                } catch (Exception e) {
                    e.printStackTrace();
                }
            }
        });
    }

    public MainApp() {
        setResizable(false);
        setTitle("College Database System");
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setBounds(100, 100, 720, 460);
    }
}
```

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login();

contentPane = new JPanel();
contentPane.setBackground(new Color(255, 255,
255));
contentPane.setBorder(new EmptyBorder(5, 5, 5, 5));
setContentPane(contentPane);
contentPane.setLayout(null);

JButton btnNewButton = new JButton("New button");
btnNewButton.setBounds(10, 132, 110, 110);

JButton btnAdd = new JButton("");
btnAdd.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent arg0) {

        int code =
Integer.parseInt(JOptionPane.showInputDialog(null, "Enter
DTE Code"));
        String name =
JOptionPane.showInputDialog(null, "Enter Name");
        String add =
JOptionPane.showInputDialog(null, "Enter Address");
        String city =
JOptionPane.showInputDialog(null, "Enter City");
        String about =
JOptionPane.showInputDialog(null, "Enter About");

        db.add(code, name, add, city, about);
    }
});
btnAdd.setIcon(new
ImageIcon("C:\\Users\\vishal\\workspace\\College Database
System\\src\\icon\\appbar.list.add.above.png"));
btnAdd.setToolTipText("Add");
btnAdd.setForeground(new Color(255, 255, 255));
btnAdd.setBackground(new Color(30, 144, 255));
btnAdd.setBounds(10, 11, 214, 110);
contentPane.add(btnAdd);

JButton btnRemove = new JButton("");
btnRemove.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        String code =
JOptionPane.showInputDialog(null, "Enter DTE Code",
"Remove College",JOptionPane.PLAIN_MESSAGE);
        db.remove(Integer.parseInt(code));
    }
});

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    }
    });
    btnRemove.setToolTipText("Remove");
    btnRemove.setIcon(new
ImageIcon("C:\\Users\\vishal\\workspace\\College Database
System\\src\\icon\\appbar.list.delete.inline.png"));
    btnRemove.setForeground(new Color(255, 255, 255));
    btnRemove.setBackground(new Color(30, 144, 255));
    btnRemove.setBounds(234, 11, 230, 110);
    contentPane.add(btnRemove);

    JButton btnUpdate = new JButton("");
    btnUpdate.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {

            int code =
Integer.parseInt(JOptionPane.showInputDialog(null, "Enter
DTE Code of the College to be Update"));
            int newCode =
Integer.parseInt(JOptionPane.showInputDialog(null, "Enter
DTE Code"));
            String name =
JOptionPane.showInputDialog(null, "Enter Name");
            String add =
JOptionPane.showInputDialog(null, "Enter Address");
            String city =
JOptionPane.showInputDialog(null, "Enter City");
            String about =
JOptionPane.showInputDialog(null, "Enter About");
            db.update(code, newCode, name, add, city,
about);
        }
    });
    btnUpdate.setToolTipText("Update");
    btnUpdate.setIcon(new
ImageIcon("C:\\Users\\vishal\\workspace\\College Database
System\\src\\icon\\appbar.list.hidden.png"));
    btnUpdate.setForeground(new Color(255, 255, 255));
    btnUpdate.setBackground(new Color(30, 144, 255));
    btnUpdate.setBounds(474, 11, 230, 110);
    contentPane.add(btnUpdate);

    txtSearch = new JTextField();
    txtSearch.setToolTipText("Enter DTE Code here");
    txtSearch.setFont(new Font("Tahoma", Font.PLAIN,
16));
    txtSearch.setBounds(140, 132, 324, 45);

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        contentPane.add(txtSearch);
        txtSearch.setColumns(10);
        txtSearch.requestFocus();

        JButton btnSearch_1 = new JButton("");
        btnSearch_1.addActionListener(new ActionListener()
{
    public void actionPerformed(ActionEvent e) {
        int code =
Integer.parseInt(txtSearch.getText());
        db.showCollege(code);
        txtSearch.setText("");
    }
});
        btnSearch_1.setToolTipText("Search");
        btnSearch_1.setIcon(new
ImageIcon("C:\\Users\\vishal\\workspace\\College Database
System\\src\\icon\\appbar.magnify.png"));
        btnSearch_1.setForeground(Color.WHITE);
        btnSearch_1.setBackground(new Color(30, 144, 255));
        btnSearch_1.setBounds(474, 132, 230, 45);
        contentPane.add(btnSearch_1);

        lblStatus = new JLabel("Welcome");
        lblStatus.setForeground(new Color(105, 105, 105));
        lblStatus.setBackground(new Color(255, 255, 255));
        lblStatus.setBounds(10, 406, 694, 14);
        contentPane.add(lblStatus);

        scrollPane = new JScrollPane();

scrollPane.setVerticalScrollBarPolicy(ScrollPaneConstants
.VERTICAL_SCROLLBAR_ALWAYS);
        scrollPane.setBounds(10, 188, 694, 218);
        contentPane.add(scrollPane);

        JLabel lblNewLabel = new JLabel("DTE Code :");
        lblNewLabel.setFont(new Font("Tahoma", Font.PLAIN,
20));
        lblNewLabel.setBounds(10, 128, 120, 49);
        contentPane.add(lblNewLabel);

        showStatus("Login");
        db = new Database(this);
        table = new JTable(db.getData(), db.getColumn()) {

            @Override

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        public boolean isCellEditable(int row, int
column) {
            return false;
        }

    };
    scrollPane.setViewportViewView(table);

}

void updateTable() {

    table = new JTable(db.getData(), db.getColumn()) {
        @Override
        public boolean isCellEditable(int row, int
column) {
            return false;
        }

    };
    scrollPane.setViewportViewView(table);
}

private void login() {
    while (true) {
        String pass = JOptionPane.showInputDialog(this,
"Enter Password", "Security Login",
JOptionPane.PLAIN_MESSAGE);
        if (pass.equals(PASSWORD) == false) {
            loginAttempt += 1;
            JOptionPane.showMessageDialog(this, "Wrong
Password, Please try again", "Warning",
JOptionPane.ERROR_MESSAGE);
            if (loginAttempt == 3) {
                System.exit(0);
            }
        } else if (pass.equals(PASSWORD) == true) {
            return;
        }
    }
}

void showStatus(String msg) {
    lblStatus.setText(LocalTime.now() + " : " + msg);
}
}

```

```

import java.sql.*;

import javax.swing.JOptionPane;

public class Database {

    private Connection con;
    private MainApp ap;
    private PreparedStatement addStatement;
    private PreparedStatement removeStatement;
    private PreparedStatement updateStatement;
    private final int COLUMN_NUMBER = 5;
    private Statement s;

    Database(MainApp ap) {
        try {
            this.ap = ap;

            Class.forName("org.sqlite.JDBC");

            con =
DriverManager.getConnection("jdbc:sqlite:college_db.db");
            ap.showStatus("Database Connected !!");

            addStatement = con.prepareStatement("insert into
college_data values(?,?,?,?,?)");
            removeStatement = con.prepareStatement("delete
from college_data where dte_code = ?");
            updateStatement = con.prepareStatement("update
college_data set dte_code = ?, name = ?, address = ?,
city = ?, about = ? "
            + "where dte_code = ?");

        } catch (Exception e) {
            e.printStackTrace();
            ap.showStatus(e.getMessage());
        }
    }

    String[][] getData() {

        String data[][] = new String[100][COLUMN_NUMBER];

        try {
            s = con.createStatement();
            ResultSet res = s.executeQuery("select * from
college_data");

```

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        int c = 0;
        while(res.next()) {
            for(int r = 0; r < COLUMN_NUMBER; r++) {
                switch(r) {
                    case 0:
                        data[c][r] = res.getInt("dte_code")+"";
                        break;
                    case 1:
                        data[c][r] = res.getString("name");
                        break;
                    case 2:
                        data[c][r] = res.getString("address");
                        break;
                    case 3:
                        data[c][r] = res.getString("city");
                        break;
                    case 4:
                        data[c][r] = res.getString("about");
                        break;
                }
            }
            c++;
        }

    } catch (SQLException e) {
        e.printStackTrace();
        ap.showStatus(e.getMessage());
    }

    return data;
}

String[] getColumn() {

    return new String[] {"DTE Code", "Name", "Address",
        "City", "About"};
}

void add(int code, String name, String address, String
city, String about) {
    try {
        addStatement.setInt(1, code);
        addStatement.setString(2, name);
        addStatement.setString(3, address);
        addStatement.setString(4, city);
        addStatement.setString(5, about);
        addStatement.executeUpdate();
    }
}

```

```

        ap.showStatus("New college inserted");
        ap.updateTable();

    } catch (SQLException e) {
        e.printStackTrace();
        ap.showStatus(e.getMessage());
    }
}

void update(int code, int newCode, String name, String
address, String city, String about) {
    try {
        updateStatement.setInt(6, code);
        updateStatement.setInt(1, newCode);
        updateStatement.setString(2, name);
        updateStatement.setString(3, address);
        updateStatement.setString(4, city);
        updateStatement.setString(5, about);
        updateStatement.executeUpdate();
        ap.updateTable();

    } catch (SQLException e) {
        e.printStackTrace();
        ap.showStatus(e.getMessage());
    }
}

void remove(int code) {
    try {

        removeStatement.setInt(1, code);
        removeStatement.executeUpdate();
        ap.showStatus("1 College removed");
        ap.updateTable();

    } catch (SQLException e) {

        e.printStackTrace();
        ap.showStatus(e.getMessage());
    }
}

void showCollege(int code) {

    try {
        Statement s = con.createStatement();
        ResultSet r = s.executeQuery("select * from

```

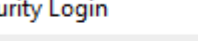


```

college_data where dte_code = " + code);
    while(r.next()) {
        int dteCode = r.getInt("dte_code");
        String name = r.getString("name");
        String address = r.getString("address");
        String city = r.getString("city");
        String msg = "DTE Code : " + dteCode +
"\nName : " + name + "\nAddress : " + address + "\nCity :
" + city;
        JOptionPane.showMessageDialog(null, msg,
name, JOptionPane.INFORMATION_MESSAGE);
    }
    } catch (SQLException e) {
        e.printStackTrace();
        JOptionPane.showMessageDialog(null,
e.getMessage());
    }
}
}

```

:: Output ::



| DTE Code | Name | Address | City | About |
|----------|---|---------|---------|-------|
| 10 | M.H.Saboo Siddik College of Engineering | | Byculla | |
| 17 | Bharati Vidyapeeth's College of Engineering | | | |
| 55 | Fr. Conceicao Rodrigues College of Engineering | | Bandra | |
| 93 | K.J. Somaiya College of Engineering | | | |
| 124 | Mahatma Gandhi Mission's College of Engineering ... | | | |
| 126 | Shah and Anchor Kutchi Engineering College | | | |
| 174 | Ramrao Adik Institute of Technology | | | |
| 237 | Terna College of Engineering | | | |
| 238 | Thadomal Shahani Engineering College | | | |
| 356 | Padmabhushan Vasantdada Patil Pratishthan's Coll... | | | |
| 366 | Vivekanand Education Society's Institute of Technolo... | | | |
| 368 | Watumull Institute of Electronic Engineering and Co... | | | |

College Database System

DTE

DTE Code : 532

Name : Vidyalankar Institute of Technology

Address : Vidyalankar campus,Vidyalankar College Marg, Wadala East, Mumbai, Maharashtra 400037

City : Wadala

OK

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|-----|---|--------------------|--------|----------------------|
| DTE | | | | |
| 356 | | | | |
| 366 | | | | |
| 368 | | | | |
| 385 | | | | |
| 403 | Om.Indra GandhiEngineering College | | | |
| 421 | Dwarkadas J.Sanghvi College ofEngineering | | | |
| 426 | Fr.Conceicao RodriguesInstitute of Technology | | | |
| 522 | Rizvi College ofEngineering | | | |
| 524 | Rajiv Gandhi Institute ofTechnology | | | |
| 531 | St. Francis Institute ofTechnology | | | |
| 532 | Vidyalankar Institute of Technology | Vidyalankar cam... | Wadala | Vidyalankar Insti... |
| 537 | Thakur College ofEngineering & Technology | | | |

17:47:30.316 : Database Connected !!