

## PROGRAM:

```
package opac;
import java.sql.Connection; import
java.sql.DriverManager; import
java.sql.PreparedStatement; import
java.sql.ResultSet;
import java.sql.SQLException;
import java.text.DateFormat;
import java.text.SimpleDateFormat;
import java.util.Date; import
java.util.Calendar; import
java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;

/**
 *
 * @author vino
 */
public class opac extends javax.swing.JFrame {

    Connection con;
    public opac() {
        try {
            initComponents();

con=DriverManager.getConnection("jdbc:mysql://localhost:3306/libdatabase","root","july");
            System.out.println("Connection established");
        } catch (SQLException ex) {
            Logger.getLogger(opac.class.getName()).log(Level.SEVERE, null, ex);
        }
    }

    private void initComponents()
    {
        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE
        );
        jLabel1.setText("Name:");
        jLabel2.setText("member id:");
        jLabel3.setText("category");
        jLabel4.setText("dept:");
        jLabel5.setText("year:");
        jLabel6.setText("issue count:");
        memCat.setModel(new javax.swing.DefaultComboBoxModel(new String[] { "student", "staff"
        }));
        memCat.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                memCatActionPerformed(evt);
            }
        });
        memSubmit.setText("Submit");
        memSubmit.addActionListener(new java.awt.event.ActionListener() {
```

```

        public void actionPerformed(java.awt.event.ActionEvent evt) {
            memSubmitActionPerformed(evt);
        }
    });

```

```

javax.swing.GroupLayout jPanel3Layout = new javax.swing.GroupLayout(jPanel3);
jPanel3.setLayout(jPanel3Layout);
private void bookSubmitActionPerformed(java.awt.event.ActionEvent evt) {
    try {
        // TODO add your handling code here:
        String t=title.getText();
        //JOptionPane.showMessageDialog(null,t);
        String ano=accessNo.getText();
        String cat=category.getText();
        String auth=author.getText();
        String stat=(String)status.getSelectedItem();
        //JOptionPane.showMessageDialog(null,stat);
        PreparedStatement ps=con.prepareStatement("insert into bookdetails values(?,?,?,?);");
        ps.setString(1,t);
        ps.setString(2,ano);
        ps.setString(3,auth);
        ps.setString(4,cat);
        ps.setString(5,stat);
        ps.executeUpdate();
        JOptionPane.showMessageDialog(null,"Book entered successfully!");
    } catch (SQLException ex) {
        Logger.getLogger(opac.class.getName()).log(Level.SEVERE, null, ex);
    }
}

```

```

private void memCatActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

```

```

private void memSubmitActionPerformed(java.awt.event.ActionEvent evt) {
    try {
        // TODO add your handling code here:
        String n=memName.getText();
        //JOptionPane.showMessageDialog(null,t);
        String id=memId.getText();
        String cat=(String)memCat.getSelectedItem();
        String dept=memDept.getText();
        String yr=memYear.getText();
        String issue=memIssued.getText();
        int cnt=Integer.parseInt(issue);
        //JOptionPane.showMessageDialog(null,stat);
        PreparedStatement ps=con.prepareStatement("insert into memberdetails
values(?,?,?,?,?,?)");
        ps.setString(1,n);
        ps.setString(2,id);

```

```

        ps.setString(3,cat);
        ps.setString(4,dept);
        ps.setString(5,yr);
        ps.setInt(6,cnt);
        ps.executeUpdate();
        JOptionPane.showMessageDialog(null,"Member entered successfully!");
    } catch (SQLException ex) {
        Logger.getLogger(opac.class.getName()).log(Level.SEVERE, null, ex);
    }
}

private void tSearchActionPerformed(java.awt.event.ActionEvent evt) {
    try {
        // TODO add your handling code here:
        String t=bookTitle.getText();
        String s;
        //JOptionPane.showMessageDialog(null,t);
        PreparedStatement ps=con.prepareStatement("select * from bookdetails where title=?");
        ps.setString(1,t);
        ps.executeQuery();
        ResultSet rs=ps.getResultSet();
        if(!ps.execute())
            JOptionPane.showMessageDialog(null,"Book doesn't exist");
        else
        {
            while(rs.next())
            {
                if(rs.getString(5).equals("issued"))
                {
                    PreparedStatement ps1=con.prepareStatement("select memberId from issuedetails
where accessNo=?");
                    ps1.setString(1,rs.getString(2));
                    ps1.executeQuery();
                    ResultSet rs2=ps1.getResultSet();
                    s="Book details\nTitle:"+rs.getString(1)+"\nAccess
no:"+rs.getString(2)+"\nAuthor:"+rs.getString(3)+"\nCategory:"+rs.getString(4)+"\nStatus:"+rs.get
String(5);
                    while(rs2.next())
                    {
                        s=s+rs2.getString(1);
                        JOptionPane.showMessageDialog(null,s);
                    }
                }
            }
        }
        else
        {
            s="Book details\nTitle:"+rs.getString(1)+"\nAccess
no:"+rs.getString(2)+"\nAuthor:"+rs.getString(3)+"\nCategory:"+rs.getString(4)+"\nStatus:"+rs.get
String(5);
            JOptionPane.showMessageDialog(null,s);
        }
    }
}
}

```

```

}

private void aSearchActionPerformed(java.awt.event.ActionEvent evt) {
    try {
        // TODO add your handling code here:
        String a=bookAuthor.getText();
        String s;
        //JOptionPane.showMessageDialog(null,t);
        PreparedStatement ps=con.prepareStatement("select * from bookdetails where
author=?");
        ps.setString(1,a);
        JOptionPane.showMessageDialog(null,a);
        ps.executeQuery();
        ResultSet rs=ps.getResultSet();
        if(!ps.execute())
            JOptionPane.showMessageDialog(null,"Book doesn't exist");
        else
        {
            while(rs.next())
            {
                //JOptionPane.showMessageDialog(null,"Entered");
                if(rs.getString(5).equals("issued"))
                {
                    //JOptionPane.showMessageDialog(null,"Entered");
                    PreparedStatement ps1=con.prepareStatement("select memberId from issuedetails
where accessNo=?");
                    ps1.setString(1,rs.getString(2));
                    ps1.executeQuery();
                    ResultSet rs2=ps1.getResultSet();
                    s="Book details\nTitle:"+rs.getString(1)+"\nAccess
no:"+rs.getString(2)+"\nAuthor:"+rs.getString(3)+"\nCategory:"+rs.getString(4)+"\nStatus:"+rs.get
String(5);
                    while(rs2.next())
                    {
                        s=s+rs2.getString(1);
                        JOptionPane.showMessageDialog(null,s);
                    }
                }
            }
        }
        else
        {
            // JOptionPane.showMessageDialog(null,"Entered");
            s="Book details\nTitle:"+rs.getString(1)+"\nAccess
no:"+rs.getString(2)+"\nAuthor:"+rs.getString(3)+"\nCategory:"+rs.getString(4)+"\nStatus:"+rs.get
String(5);
            JOptionPane.showMessageDialog(null,s);
        }
    }
}
}

```

```

}

private void issueButtonActionPerformed(java.awt.event.ActionEvent evt) {
    try {
        // TODO add your handling code here:
        String id=memberId.getText();
        String book=bookToIssue.getText();
        String cat=(String)issueCat.getSelectedItem();
        Date date1=new Date();
        int flag=0;
        SimpleDateFormat df1=new SimpleDateFormat("dd");
        SimpleDateFormat df2=new SimpleDateFormat("MM");
        SimpleDateFormat df3=new SimpleDateFormat("yyyy");
        int d=Integer.parseInt(df1.format(date1));
        int mon=Integer.parseInt(df2.format(date1));
        int yr=Integer.parseInt(df3.format(date1));
        mon=mon+6;
        if(mon>12)
        {
            yr++;
            mon=mon-12;
        }
        String m=Integer.toString(mon);
        String y=Integer.toString(yr);
        String dt2=df1.format(date1)+"-"+m+"-"+y;
        //System.out.println(m);
        String dt=df1.format(date1)+"-"+df2.format(date1)+"-"+df3.format(date1);
        //JOptionPane.showMessageDialog(null,df1.format(date1));
        PreparedStatement ps=con.prepareStatement("select * from bookdetails where title=?");
        ps.setString(1,book);
        ps.executeQuery();
        ResultSet rs=ps.getResultSet();
        while(rs.next())
        {
            if(rs.getString(5).equals("available")&& flag==0)
            {
                PreparedStatement ps2=con.prepareStatement("select * from memberdetails where
memberId=?");
                ps2.setString(1,id);
                ps2.executeQuery();
                ResultSet rs2=ps2.getResultSet();
                while(rs2.next())
                {
                    if((rs2.getString(3).equals("staff") && rs2.getInt(6)<5)
||(rs2.getString(3).equals("student") && rs2.getInt(6)<3))
                    {
                        System.out.println("issued");
                        PreparedStatement ps1=con.prepareStatement("insert into issuedetails
values(?,?,?,?);")
;

```

```

        ps1.setString(1,rs.getString(2));
        ps1.setString(2,id);
        ps1.setString(3,dt);
        ps1.setString(4,dt2);
        ps1.setInt(5,0);
        ps1.executeUpdate();
        flag=1;
        PreparedStatement ps4=con.prepareStatement("update memberdetails set
issueCount=? where memberId=?");
        ps4.setInt(1,rs2.getInt(6)+1);
        ps4.setString(2,id);
        ps4.executeUpdate();
        PreparedStatement ps3=con.prepareStatement("update bookdetails set
status=? where accessNo=?");
        ps3.setString(1,"issued");
        ps3.setString(2,rs.getString(2));
        ps3.executeUpdate();
        JOptionPane.showMessageDialog(null,"issued");
    }
    else
        JOptionPane.showMessageDialog(null,"Issue count exceeded");
    }
}
}
} catch (SQLException ex) {
    Logger.getLogger(opac.class.getName()).log(Level.SEVERE, null, ex);
}
}
}

```

```

private void returnButtonActionPerformed(java.awt.event.ActionEvent evt) {
    try {
        // TODO add your handling code here:

        String id=retMember.getText();
        String book=retBook.getText();
        String ano=retAccess.getText();
        Date date1=new Date();
        int flag=0,f;
        SimpleDateFormat df1=new SimpleDateFormat("dd");
        SimpleDateFormat df2=new SimpleDateFormat("MM");
        SimpleDateFormat df3=new SimpleDateFormat("yyyy");
        int d=Integer.parseInt(df1.format(date1));
        int mon=Integer.parseInt(df2.format(date1));
        int yr=Integer.parseInt(df3.format(date1));
        String dt2;
        int rd,rmon,ryr;
        //System.out.println(m);
        String dt=df1.format(date1)+"-"+df2.format(date1)+"-"+df3.format(date1);
        //JOptionPane.showMessageDialog(null,df1.format(date1));
        PreparedStatement ps=con.prepareStatement("select * from issuedetails where
accessNo=?");
        ps.setString(1,ano);
    }
}

```

```

ps.executeQuery();
String[] retDate;
ResultSet rs=ps.getResultSet();
String fine;
int cnt;
while(rs.next())
{

    dt2=rs.getString(4);
    retDate=dt2.split("-");
    rd=Integer.parseInt(retDate[0]);
    rmon=Integer.parseInt(retDate[1]);
    ryr=Integer.parseInt(retDate[2]);
    //rd=24;rmon=9;ryr=2013;
    if(yr>ryr ||(yr==ryr && mon>rmon)||(yr==ryr && mon==rmon && d>rd))
    {
        f=yr-ryr;
        f*=365;
        f=f+((mon-rmon)*30)+(d-rd);f=f*2;
        fine="Pay fine of : Rs."+Integer.toString(f);
        JOptionPane.showMessageDialog(null,fine);
        PreparedStatement ps1=con.prepareStatement("delete from issuedetails where
accessNo=?");
        ps1.setString(1,ano);
        ps1.executeUpdate();
    }
    PreparedStatement ps3=con.prepareStatement("select * from memberdetails where
memberId=?");
    ps3.setString(1,id);
    ps3.executeQuery();
    ResultSet rs3=ps3.getResultSet();
    while(rs3.next())
    {
        cnt=rs3.getInt(6);
        PreparedStatement ps2=con.prepareStatement("update memberdetails set issuecount=?
where memberId=?");
        ps2.setInt(1,cnt-1);
        ps2.setString(2,id);
    }
    PreparedStatement ps4=con.prepareStatement("update bookdetails set status=? where
accessNo=?");
    ps4.setString(1,"available");
    ps4.setString(2,ano);
    ps4.executeUpdate();
    JOptionPane.showMessageDialog(null,"Returned!");
}

} catch (SQLException ex) {
    Logger.getLogger(opac.class.getName()).log(Level.SEVERE, null, ex);
}
}

```

```

private void listButtonActionPerformed(java.awt.event.ActionEvent evt) {
    try {
        // TODO add your handling code here:
        String id=issueMem.getText();
        PreparedStatement ps=con.prepareStatement("select * from issuedetails where
memberId=?");
        ps.setString(1,id);
        ps.executeQuery();
        String s;
        ResultSet rs=ps.getResultSet();
        while(rs.next())
        {
            PreparedStatement ps1=con.prepareStatement("select * from bookdetails where
accessNo=?");
            ps1.setString(1,rs.getString(1));
            ps1.executeQuery();
            ResultSet rs2=ps1.getResultSet();
            while(rs2.next())
            {
                s="Details:\nBook:"+rs2.getString(1)+"\nMember id:"+rs.getString(2);
                JOptionPane.showMessageDialog(null,s);
            }
        }
    } catch (SQLException ex) {
        Logger.getLogger(opac.class.getName()).log(Level.SEVERE, null, ex);
    }
}

```

```

// Variables declaration - do not modify
private javax.swing.JButton aSearch;
private javax.swing.JTextField accessNo;
private javax.swing.JTextField author;
private javax.swing.JTextField bookAuthor;
private javax.swing.JButton bookSubmit;
private javax.swing.JTextField bookTitle;
private javax.swing.JTextField bookToIssue;
private javax.swing.JTextField category;
private javax.swing.JPanel container2;
private javax.swing.JButton issueButton;
private javax.swing.JComboBox issueCat;
private javax.swing.JTextField issueMem;
private javax.swing.JPanel issuePanel;
private javax.swing.JLabel jLabel1;
private javax.swing.JTabbedPane jTabbedPane1;
private javax.swing.JLabel l1;
private javax.swing.JLabel l2;
private javax.swing.JLabel l3;
private javax.swing.JLabel l4;
private javax.swing.JLabel l5;
private javax.swing.JButton listButton;
private javax.swing.JComboBox memCat;
private javax.swing.JTextField memDept;

```



```

private javax.swing.JTextField memId;
private javax.swing.JTextField memIssued;
private javax.swing.JTextField memName;
private javax.swing.JButton memSubmit;
private javax.swing.JTextField memYear;
private javax.swing.JTextField memberId;
private javax.swing.JTextField retAccess;
private javax.swing.JTextField retBook;
private javax.swing.JTextField retMember;
private javax.swing.JButton returnButton;
private javax.swing.JPanel returnPanel;
private javax.swing.JPanel searchAuthor;
private javax.swing.JPanel searchTitle;
private javax.swing.JComboBox status;
private javax.swing.JButton tSearch;
private javax.swing.JTextField title;
// End of variables declaration
}

```

SAMPLE INPUT OUTPUT:

The screenshot shows a Java Swing window titled 'Library Management System' with a tabbed interface. The 'Entry' tab is active. The form has two columns of input fields. The left column includes 'Name:', 'member id:', 'category' (a dropdown menu showing 'student'), 'dept:', 'year:', and 'issue count:'. The right column includes 'Title:' (with the text 'The first family'), 'Access no:' (with 'b3'), 'category:' (with 'Fiction'), 'author:' (with 'John'), and 'status:' (with 'ava'). There are two 'Submit' buttons. A 'Message' dialog box is overlaid on the form, displaying an information icon and the text 'Book entered successfully!' with an 'OK' button.

The screenshot shows the same application window, but the 'List issue details' tab is now active. The 'Member id' field is filled with 'm1' and a 'list' button is located below it. A 'Message' dialog box is displayed, showing an information icon and the text 'Details: Book:Inferno Member id:m1' with an 'OK' button.

✕ ◀ ▶

EntrySearchIssueReturnList issue details

Category:

student

Book:

Prisoner of birth

Member id:

m1

Issue

✕ Message

i

issued

OK

✕ ◀ ▶

EntrySearchIssueReturnList issue details

Member id:

m1

Book name:

Inferno

Access no:

b1

Return

✕ Message

i

Returned!

OK