BSc (Hons) in Computing
Level 5

INDIVIDUAL ASSIGNMENT

Module Code & Title: COSE50586
Web & Mobile Application Development - 1

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MARKING CRITERIA	%	MARKS OBTAINED
TOTAL (%)		

Acknowledgement

I would like to Thank my Web & Mobile Application Development Lecturer Ms.Umanga to motivating and Helping around me to do this Task.

Executive summary

"Ministry of Education" is a website which will allow to complaint about the difficulties in school education system and problems in school premises. So, this Web application will allow the user to add complaints from anywhere in the country, This Web Application Developed MVC model architecture With Model, View, Controller.

Front End of this web application Implemented by HTML, JSP, CSS and DATA BASE
Back End of this web application Implemented by SERVLETS.

Table of Content

01.Introduction

"Ministry of Education" helps people to add complaints about the issues that they are having in Schools. There are Four types of users.

- Visitor
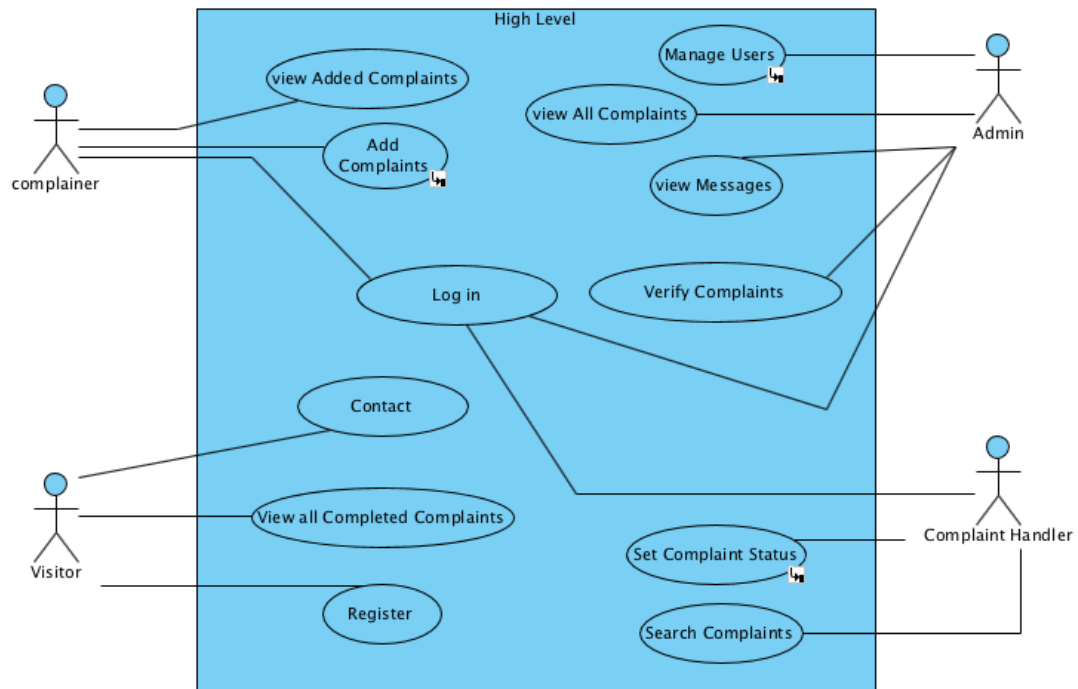- Complainer
- Complaint Handler
- Admin

Visitor can view the completed Complaints and Contact the Admin. If visitor wants to add a complaint, Visitor have to Register to the system. After registering, Complainer can add complainer and view the added complaints. Admin will verify (Accept and Reject) the Complaints added complainer. Complaint Handler Will Take actions to the accepted complaints by Admin.

Functional Requirements: NetBeans 8.2, MySQL Workbench 8.0
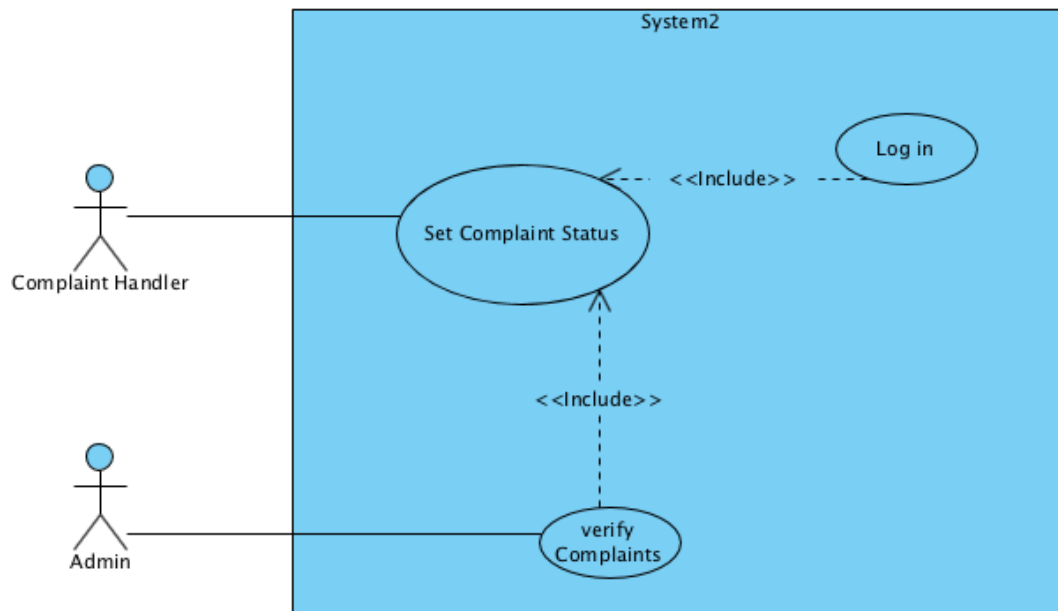
02.Key Functionality

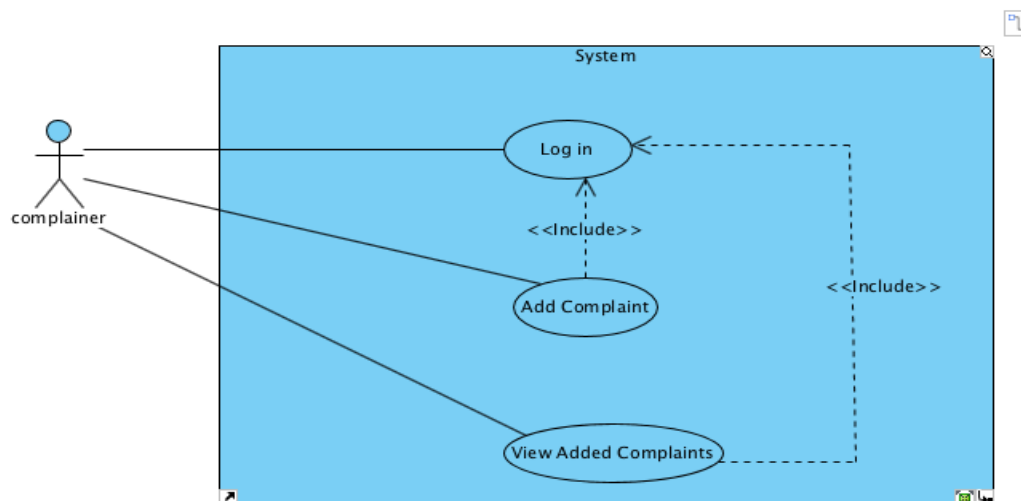## 2.1 Design

2.1.1 High Level Diagram (Use Case Diagram)
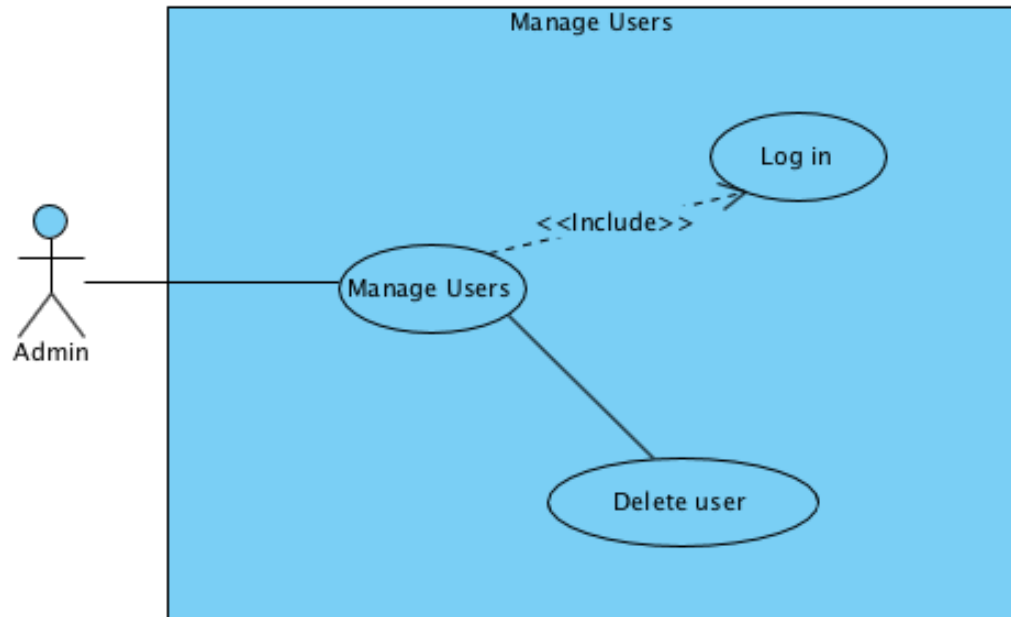
2.1.2 Sub use case diagrams

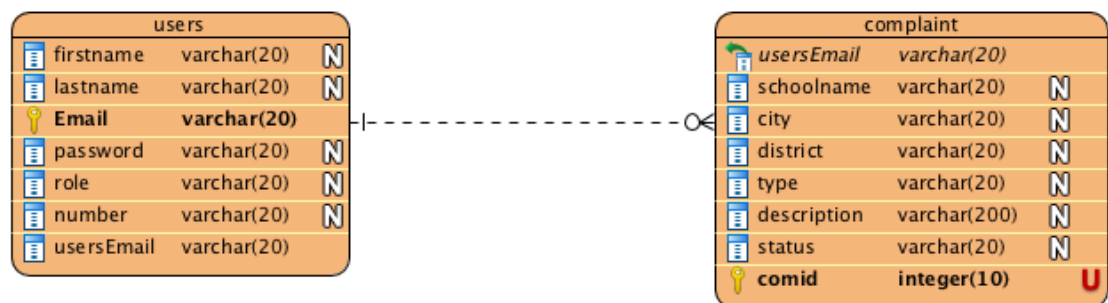### 2.1.2.1 Set Complaint Status

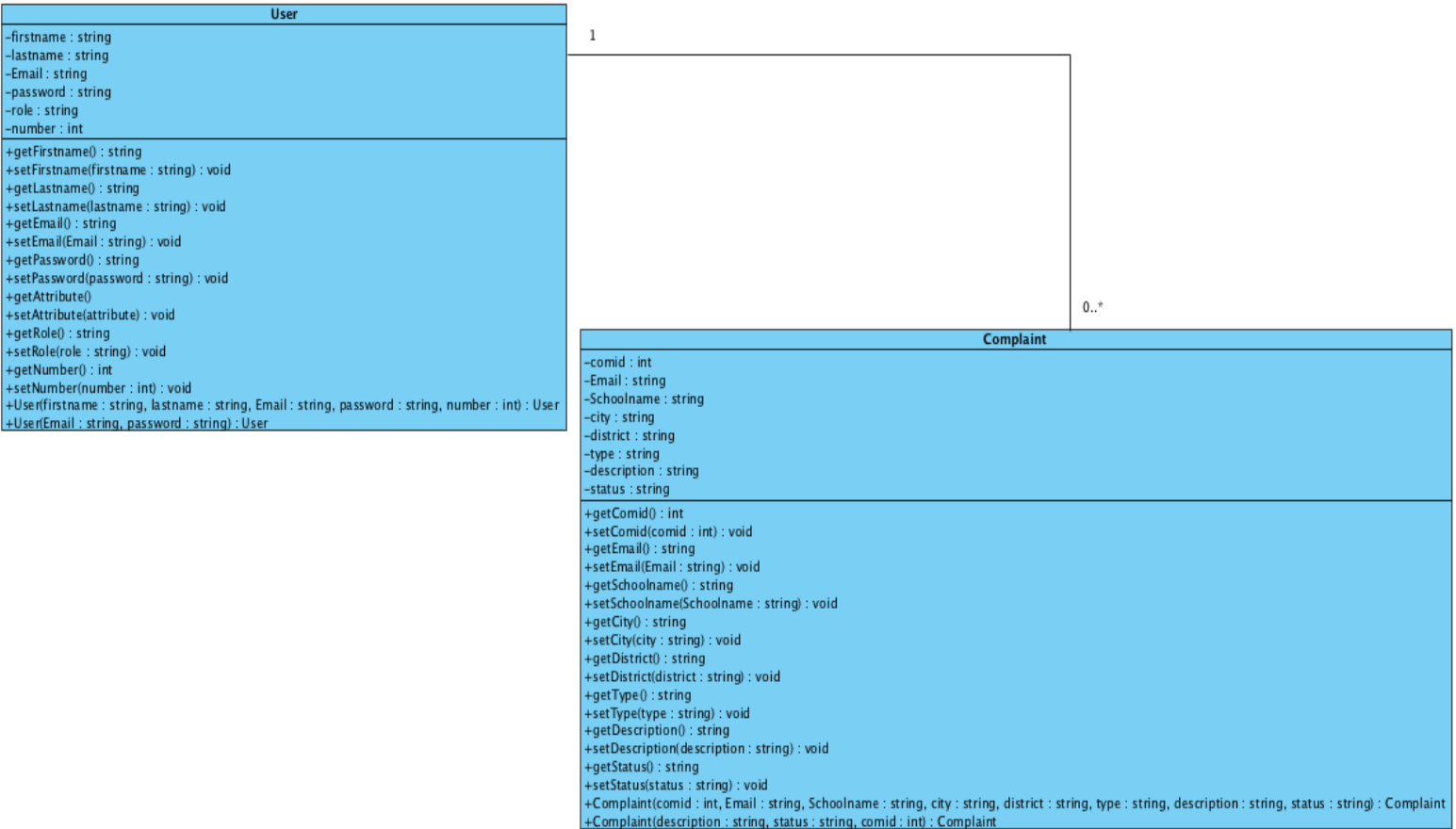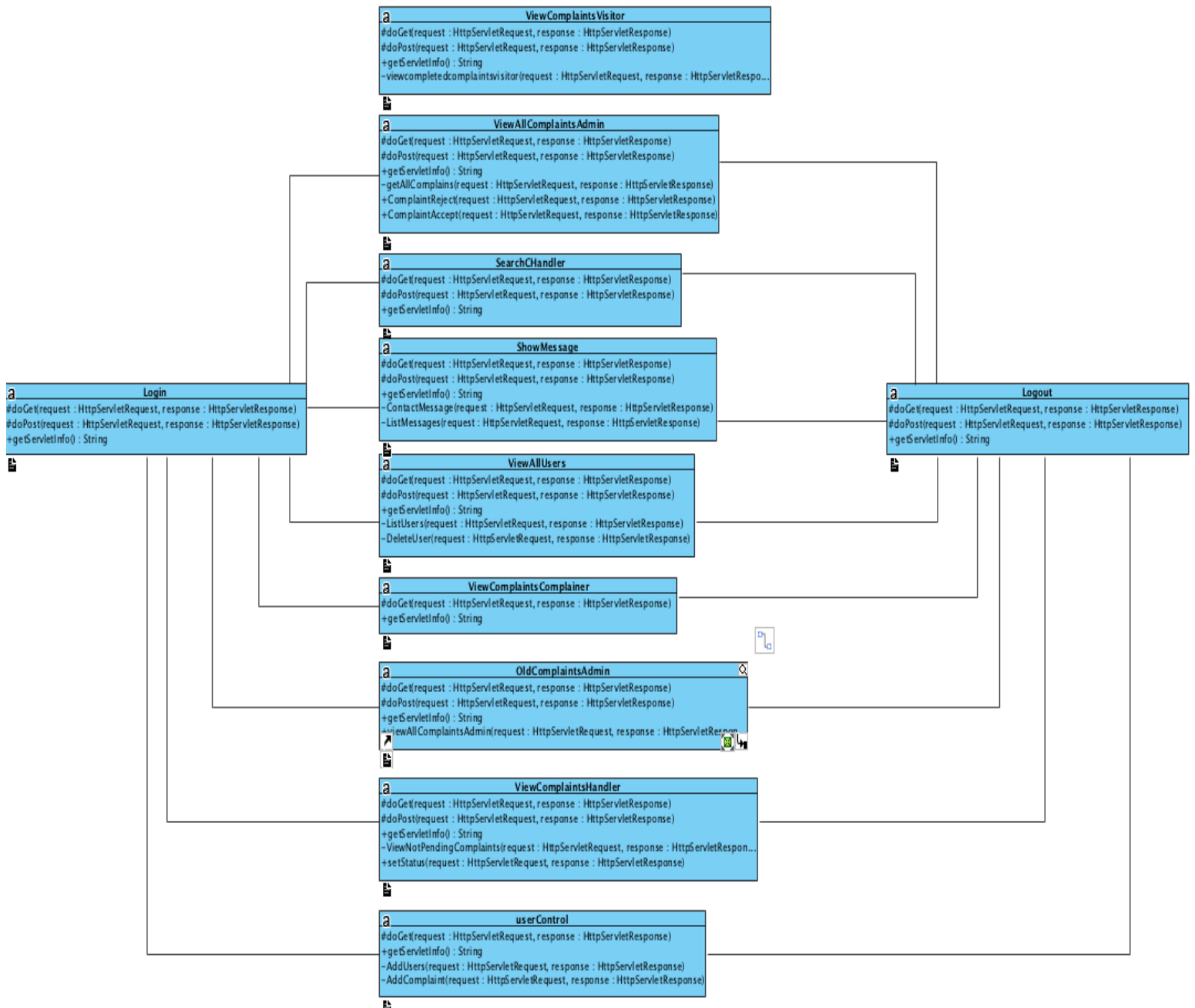### 2.1.2.2 Add Complaints

2.1.2.3 Manage Users
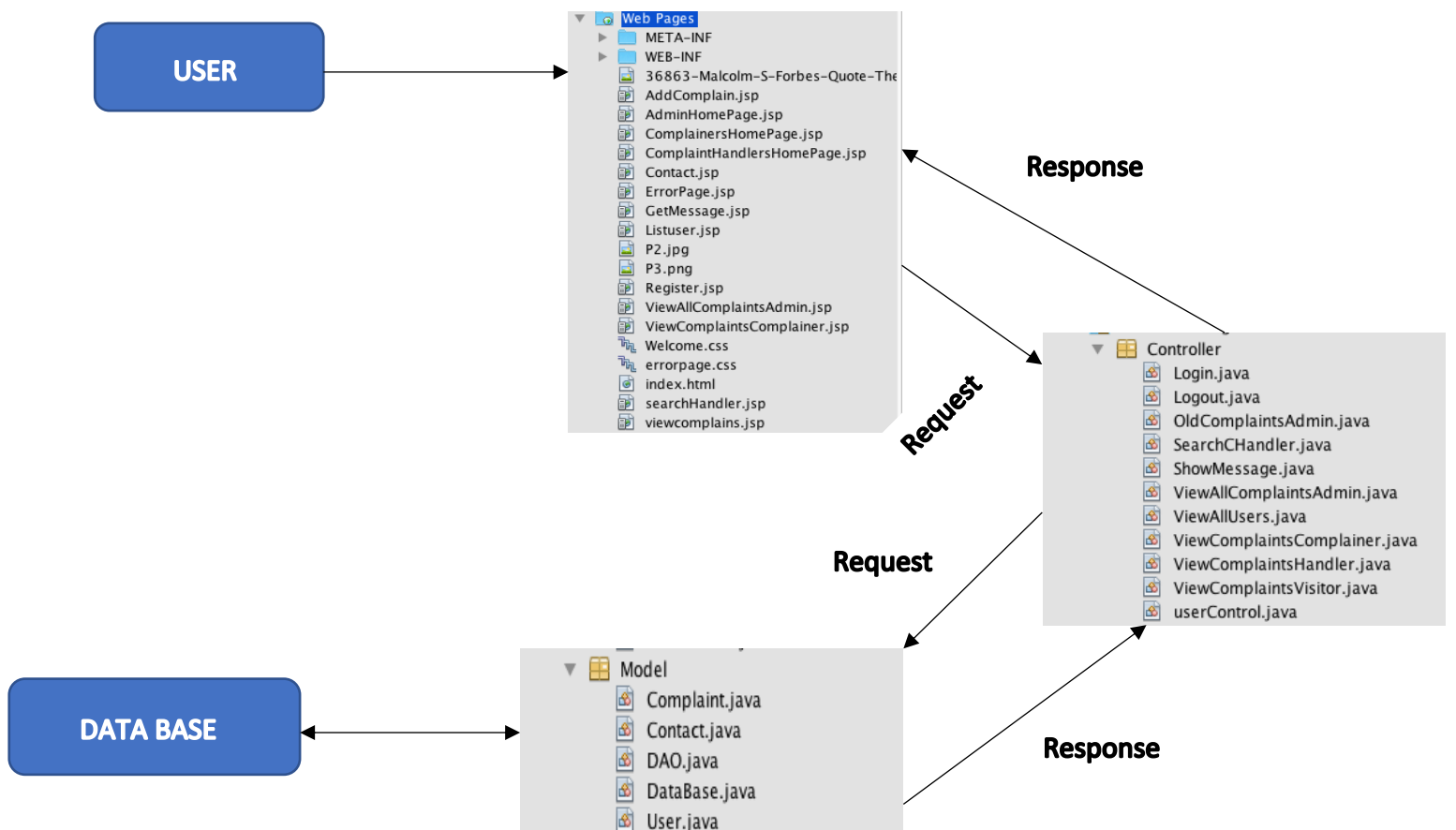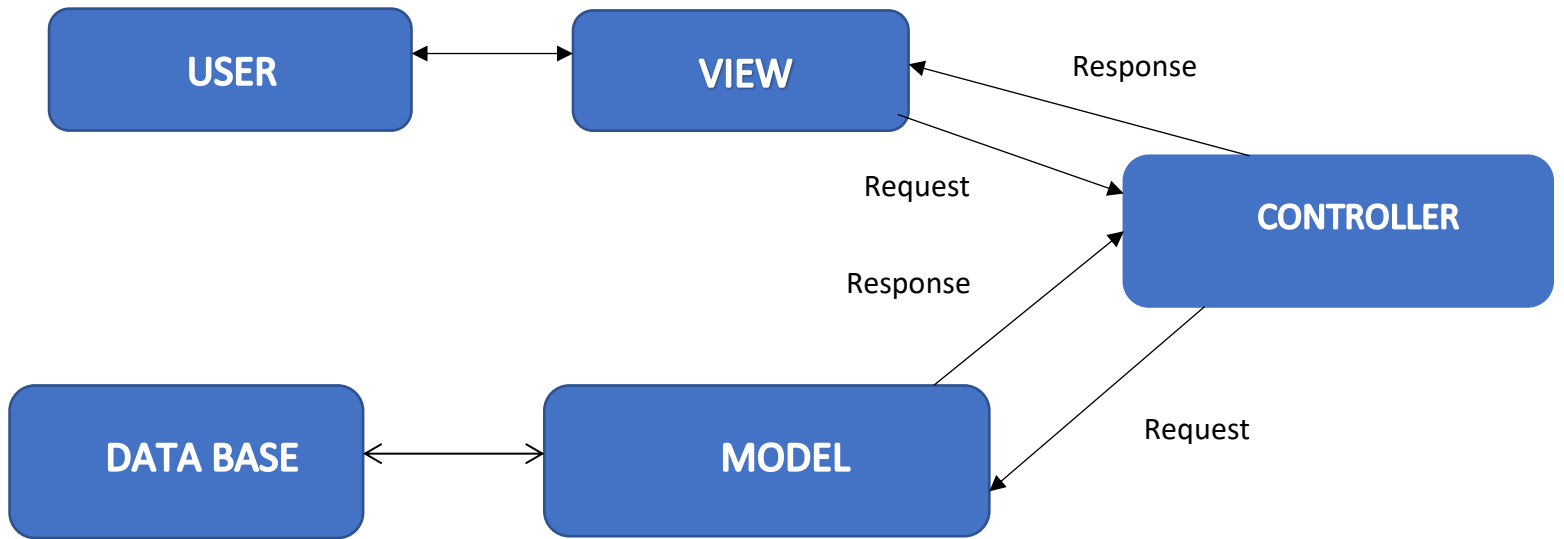

2.1.3 Entity Relationship Diagram

➢ User can have Many Complaints, Many Complaints Can Have One User.

2.1.4 Entity Class Diagram

User

-firstname : string
-lastname : string
-Email : string
-password : string
-role : string
-number : int

+getFirstname() : string
+setFirstname(firstname : string) : void
+getLastname() : string
+setLastname(lastname : string) : void
+getEmail() : string
+setEmail(Email : string) : void
+getPassword() : string
+setPassword(password : string) : void
+getAttribute()
+setAttribute(attribute) : void
+getRole() : string
+setRole(role : string) : void
+getNumber() : int
+setNumber(number : int) : void
+User(firstname : string, lastname : string, Email : string, password : string, number : int) : User
+User(Email : string, password : string) : User

1

0..*

Complaint

-comid : int
-Email : string
-Schoolname : string
-city : string
-district : string
-type : string
-description : string
-status : string

+getComid() : int
+setComid(comid : int) : void
+getEmail() : string
+setEmail(Email : string) : void
+getSchoolname() : string
+setSchoolname(Schoolname : string) : void
+getCity() : string
+setCity(city : string) : void
+getDistrict() : string
+setDistrict(district : string) : void
+getType() : string
+setType(type : string) : void
+getDescription() : string
+setDescription(description : string) : void
+getStatus() : string
+setStatus(status : string) : void
+Complaint(comid : int, Email : string, Schoolname : string, city : string, district : string, type : string, description : string, status : string) : Complaint
+Complaint(description : string, status : string, comid : int) : Complaint

ViewComplaints Visitor

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String
~viewcompletedcomplaintsvisitor(request : HttpServletRequest, response : HttpServletRespo...

ViewAllComplaints Admin

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String
-getAllComplains(request : HttpServletRequest, response : HttpServletResponse)
+ComplaintReject(request : HttpServletRequest, response : HttpServletResponse)
+ComplaintAccept(request : HttpServletRequest, response : HttpServletResponse)

SearchCHandler

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String

ShowMessage

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String
-ContactMessage(request : HttpServletRequest, response : HttpServletResponse)
-ListMessages(request : HttpServletRequest, response : HttpServletResponse)

Login

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String

Logout

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String

ViewAllUsers

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String
-ListUsers(request : HttpServletRequest, response : HttpServletResponse)
-DeleteUser(request : HttpServletRequest, response : HttpServletResponse)

ViewComplaints Complainer

#doGet(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String

OldComplaintsAdmin

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String
+viewAllComplaintsAdmin(request : HttpServletRequest, response : HttpServletRespon...

ViewComplaintsHandler

#doGet(request : HttpServletRequest, response : HttpServletResponse)
#doPost(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String
-ViewNotPendingComplaints(request : HttpServletRequest, response : HttpServletRespon...
+setStatus(request : HttpServletRequest, response : HttpServletResponse)

userControl

#doGet(request : HttpServletRequest, response : HttpServletResponse)
+getServletInfo() : String
-AddUsers(request : HttpServletRequest, response : HttpServletResponse)
-AddComplaint(request : HttpServletRequest, response : HttpServletResponse)

2.2 MVC

USER ⟷ VIEW

VIEW → CONTROLLER : Request

CONTROLLER → VIEW : Response

MODEL → CONTROLLER : Response

CONTROLLER → MODEL : Request

DATA BASE ⟷ MODEL

USER → Web Pages

Web Pages
- ▼ META-INF
- ▶ WEB-INF
- 36863-Malcolm-S-Forbes-Quote-The
- AddComplain.jsp
- AdminHomePage.jsp
- ComplainersHomePage.jsp
- ComplaintHandlersHomePage.jsp
- Contact.jsp
- ErrorPage.jsp
- GetMessage.jsp
- Listuser.jsp
- P2.jpg
- P3.png
- Register.jsp
- ViewAllComplaintsAdmin.jsp
- ViewComplaintsComplainer.jsp
- Welcome.css
- errorpage.css
- index.html
- searchHandler.jsp
- viewcomplains.jsp

Controller
- Login.java
- Logout.java
- OldComplaintsAdmin.java
- SearchCHandler.java
- ShowMessage.java
- ViewAllComplaintsAdmin.java
- ViewAllUsers.java
- ViewComplaintsComplainer.java
- ViewComplaintsHandler.java
- ViewComplaintsVisitor.java
- userControl.java

Model
- Complaint.java
- Contact.java
- DAO.java
- DataBase.java
- User.java

Response

Request

Request

Response

DATA BASE ⟷ Model

2.3 Implementation

2.3.1 Home Page(Interface)

Ministry of Education

HOME   CONTACT   VIEW COMPLAINS

username:

Email

password:

password

Log in

Don't have an Account?Register

WELCOME TO THE EDUCATION DEPARTMENT

YOU CAN ADD COMPLAINTS ABOUT SCHOOLS RESOURCES AND ISSUES.WE HEAR TO THEM AND WE WILL HELP AND TAKE ACTION TO SOLVE THEM

The purpose of education is to replace an empty mind with an open one.

Malcolm S. Forbes

quotefancy

2.3.2 View Complaints for Visitor

After Clicking "VIEW COMPLAINTS", Visitor can view the Completed Complaints by Complaint Handler.

Ministry of Education

HOME   CONTACT   VIEW COMPLAINTS

Complainer	School Name	City	District	Type	Complaint Details
leo	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME
leo	ROYAL COLLEGE	COLOMBO	COLOMBO	facilities	need another IT building
leo	ROYAL COLLEGE	COLOMBO	COLOMBO	facilities	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME
tony	AMAL INTERNATIONAL	COLOMBO	COLOMBO	student's discipline	STUDENTS CALL PRINCIPLE "PINA".......
leo	ZAHIRA COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHERS TALK TO MUCH
tony	AMAL INTERNATIONAL	COLOMBO	COLOMBO	facilities	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME
khalid	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME

"ViewComplaintsVisitor" Servlet

```java
public class ViewComplaintsVisitor extends HttpServlet
{
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException
    {
        try {
            String command = request.getParameter("command");
            if(command == null)
            {
                command="DONE_COM";
            }

            switch(command)
            {

                case "DONE_COM":viewcompletedcomplaintsvisitor(request,response);
                default:

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

    }
```

```
        private void viewcompletedcomplaintsvisitor(HttpServletRequest request, HttpServletResponse response)
        throws Exception
        {
            DAO dao= new DAO();

            List<Complaint>  complains=dao.getAllcompletedcomplaintsVisitor();
            request.setAttribute("DONE_COM",complains);

            RequestDispatcher dispatcher=request.getRequestDispatcher("viewcomplains.jsp");
            dispatcher.forward(request, response);


        }
```

"DAO" Method

```
public List<Complaint> getAllcompletedcomplaintsVisitor()
{
    List<Complaint> complains = new ArrayList<Complaint>();
    try{
        PreparedStatement ps = connection.prepareStatement("SELECT * FROM complaint WHERE status='COMPLETED'");
        ResultSet rs = ps.executeQuery();

        while(rs.next())
        {
            int comid=rs.getInt("comid");
            String Email = rs.getString("Email");
            String Schoolname=rs.getString("schoolname");
            String city=rs.getString("city");
            String district=rs.getString("district");
            String type=rs.getString("type");
            String description=rs.getString("description");
            String status=rs.getString("status");
            Complaint allcomplains = new Complaint(comid,Email,Schoolname,city,district,type,description,status);
            complains.add(allcomplains);
        }
    }
    catch(Exception e)
    {
        e.printStackTrace();
    }
    return complains;
}
```

"getAllCompletedComplaintsVisitor" Method in DAO class will get all the Complaints in "complaints" table where status is "COMPLETED".

2.3.3 Contact(Visitor)

Ministry of Education

HOME   CONTACT   VIEW COMPLAINS

Contact

Full Name:

Full Name

Email:

Subject

subject:

message about?

Leave a message:

Message

Submit

After filling the form and clicking "Submit" Data will store in "Contact" table.

"DAO" Method

```java
public void Contact(Contact contact)
{
    PreparedStatement ps;
    try
    {
        ps=connection.prepareStatement("INSERT INTO Contact(fullname,Email,subject,message) VALUES(?,?,?,?)");
        ps.setString(1,contact.getFullname());
        ps.setString(2,contact.getEmail());
        ps.setString(3,contact.getSubject());
        ps.setString(4,contact.getMessage());
        ps.executeUpdate();
    }
    catch(SQLException ex)
    {
        Logger.getLogger(DAO.class.getName()).log(Level.SEVERE,null,ex);
    }

}
```

"ShowMessage" Servlet

```java
private void ContactMessage(HttpServletRequest request, HttpServletResponse response)
throws Exception
{
    DAO dao= new DAO();

    String fullname=request.getParameter("fullname");
    String Email=request.getParameter("Email");
    String subject=request.getParameter("subject");
    String message=request.getParameter("message");

    Model.Contact contact=new Model.Contact(fullname,Email,subject,message);
    dao.Contact(contact);

    response.sendRedirect("Contact.jsp");

}
```

2.3.4 Register

If visitor wants to add complaints, then visitor have to register to the system. After clicking "Register" visitor have to fill the Register form and click "Submit". After registering filled data will stored in "users" table and Visitors "role" becomes "Complainer".

Ministry of Education

HOME   CONTACT   VIEW COMPLAINS

Create a New Account

First Name:

Enter First Name

Last Name:

Enter Last Name

Email:

example@email.com

password:

set a password

Contact Number: +94

717777777

Submit

"DAO" Method

```java
public void addUsers(User user)
{
    try
    {
        PreparedStatement preparedStatement = connection.prepareStatement("INSERT INTO users(firstname,lastname,Email,password,role,number) VALUES(?,?,?,?,?

        preparedStatement.setString(1, user.getFirstname());
        preparedStatement.setString(2, user.getLastname());
        preparedStatement.setString(3, user.getEmail());
        preparedStatement.setString(4, user.getPassword());
        preparedStatement.setString(5, user.getRole());
        preparedStatement.setInt(6, user.getNumber());
        preparedStatement.executeUpdate();
    } catch(SQLException ex)
    {
        Logger.getLogger(DAO.class.getName()).log(Level.SEVERE,null,ex);
    }
}
```

"userControl" Servlet

```java
private void AddUsers(HttpServletRequest request, HttpServletResponse response)
        throws Exception{
    DAO dao = new DAO();

    String firstname = request.getParameter("firstname");
    String lastname=request.getParameter("lastname");
    String Email = request.getParameter("Email");
    String password= request.getParameter("password");
    String role = "complainer";
    int number= Integer.parseInt(request.getParameter("Number"));

    User newusers = new User (firstname,lastname,Email,password,role,number);
    dao.addUsers(newusers);

    RequestDispatcher dispatcher=request.getRequestDispatcher("index.html");
    dispatcher.forward(request, response);
}
```

2.3.5 Log in

Once registered, user can access the account. "admin" and "complaintHandler" are entered to the database manually.

Ministry of Education

HOME   CONTACT   VIEW COMPLAINS

username:

Email

password:

password

Log in

Don't have an Account?Register

"DAO" Method

```java
public String authenticUser(User user) throws SQLException
{
    String Email=user.getEmail();
    String password=user.getPassword();

    try
    {
        PreparedStatement ps=connection.prepareStatement("select Email,password,role from users ");
        ResultSet rs=ps.executeQuery();
        while(rs.next())
        {
            String email=rs.getString("Email");
            String Password=rs.getString("password");
            String role=rs.getString("role");

            if(Email.equals(email)&& password.equals(Password)&& role.equals("admin"))
                return "admin";
            else if(Email.equals(email)&& password.equals(Password)&& role.equals("complaintHandler"))
                return "complaintHandler";
            else if(Email.equals(email)&& password.equals(Password)&& role.equals("complainer"))
                return "complainer";

        }
    }
    catch(Exception ex)
    {
        ex.printStackTrace();

    }
    return "invalid";
}
```

```java
public boolean chechkUsers(String Email)
{
    boolean st=false;
    try
    {
        PreparedStatement ps=connection.prepareStatement("SELECT Email FROM users WHERE Email=?  ");
        ps.setString(1, Email);
        ResultSet rs=ps.executeQuery();
        st=rs.next();
    }
    catch(Exception e)
    {
        e.printStackTrace();
    }
    return st;
}
```

"Login" Servlet

```java
protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
{
    response.setContentType("text/html");
    PrintWriter out=response.getWriter();

    String Email=request.getParameter("Email");
    String Password=request.getParameter("password");

    User user= new User(Email,Password);

    DAO dao= new DAO();
    String role=null;

    try
    {
        role=dao.authenticUser(user);
    }
    catch(SQLException ex)
    {
        Logger.getLogger(Login.class.getName()).log(Level.SEVERE,null,ex);
    }
    switch(role)
    {
        case"admin":
        {
            HttpSession session=request.getSession();
            session.setAttribute("Email", Email);
            response.sendRedirect("ViewAllComplaintsAdmin");
            break;
        }
        case"complaintHandler":
        {
            HttpSession session=request.getSession();
            session.setAttribute("Email", Email);
            response.sendRedirect("ViewComplaintsHandler");
            break;
        }
        case"complainer":
        {
            HttpSession session=request.getSession();
            session.setAttribute("Email", Email);
            response.sendRedirect("ViewComplaintsComplainer");
            break;
        }
        default:
        {
            out.println("Sorry,Inavlid username or Password");
            request.getRequestDispatcher("index.html").include(request, response);

        }
    }
}
```

2.3.6 Log out

you are successfully Logged Out

Ministry of Education

HOME   CONTACT   VIEW COMPLAINS

username:

Email

password:

"Logout" Servlet

```java
public class Logout extends HttpServlet
{

    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException
    {
        response.setContentType("text/html");
        PrintWriter out=response.getWriter();
        out.print("you are successfully Logged Out");
        request.getRequestDispatcher("index.html").include(request, response);

        Cookie ck=new Cookie("name","");

        ck.setMaxAge(0);
        response.addCookie(ck);


    }
```

2.3.7 Add Complaint(Complainer)

After clicking "Add a Complaint" button, system will direct to the complaint adding form.

"userControl" Servlet

```java
private void AddComplaint(HttpServletRequest request, HttpServletResponse response)
throws Exception
{
    DAO dao= new DAO();
    int comid=0;
    String Email=request.getParameter("Email");
    String schoolname=request.getParameter("Schoolname");
    String city=request.getParameter("city");
    String district=request.getParameter("district");
    String type=request.getParameter("Complaint Reguarding?");
    String description=request.getParameter("description");
    String status="PENDING";

    Complaint complaint= new Complaint(comid,Email,schoolname,city,district,type,description,status);
    dao.addComplain(complaint);

    response.sendRedirect("ComplainersHomePage.jsp");
}
```

"DAO" Method

```java
public void addComplain(Complaint complaint)
{
    try
    {
        PreparedStatement preparedStatement= connection.prepareStatement("INSERT INTO complaint(Email,schoolname,city,district,type,description,status,comi
            +" values(?,?,?,?,?,?,?,?)");

        preparedStatement.setString(1, complaint.getEmail());
        preparedStatement.setString(2, complaint.getSchoolname());
        preparedStatement.setString(3, complaint.getCity());
        preparedStatement.setString(4, complaint.getDistrict());
        preparedStatement.setString(5, complaint.getType());
        preparedStatement.setString(6, complaint.getDescription());
        preparedStatement.setString(7, complaint.getStatus());
        preparedStatement.setInt(8, complaint.getComid());
        preparedStatement.executeUpdate();
    }
    catch (SQLException ex)
    {
        Logger.getLogger(DAO.class.getName()).log(Level.SEVERE,null,ex);
    }
}
```

2.3.8 View Added Complaints(Complainer)

<div align="center">

Ministry of Education

</div>

HOME   ADD COMPLAINT   LOG OUT

View Complaints

Complaint ID	Added Complains	Complain Status
1	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	COMPLETED
3	NEED A GOOD DRAINAGE SYSTEM	IN-PROGRESS
7	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	OUT OF SCOPE
8	need another IT building	COMPLETED
9	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	OUT OF SCOPE
10	NEED A GOOD DRAINAGE SYSTEM	OUT OF SCOPE
12	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	COMPLETED
14	TEACHERS TALK TO MUCH	COMPLETED

"DAO" Method

```java
public List<Complaint> getComplaintDescriptionforcomplainer(String email)
{
    List<Complaint> getdescription = new ArrayList<Complaint>();
    try
    {
        PreparedStatement ps = connection.prepareStatement("SELECT comid,description,status FROM complaint WHERE Email=?");
        ps.setString(1, email);
        ResultSet rs = ps.executeQuery();

        while(rs.next())
        {
            int comid=rs.getInt("comid");
            String description = rs.getString("description");
            String status=rs.getString("status");


            Complaint allDescription = new Complaint(description,status,comid);
            getdescription.add(allDescription);
        }
    }
    catch(Exception ex)
    {
        ex.printStackTrace();
    }

    return getdescription;
}
```

"ViewComplaintsComplainer" Servlet

```java
public class ViewComplaintsComplainer extends HttpServlet
{
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException
    {
        DAO dao= new DAO();
        String email=request.getParameter("Email");

        List<Complaint>  getdescription=dao.getComplaintDescriptionforcomplainer(email);
        request.setAttribute("GET_DES",getdescription);
        RequestDispatcher dispatcher=request.getRequestDispatcher("ViewComplaintsComplainer.jsp");
        dispatcher.forward(request, response);
    }
}
```
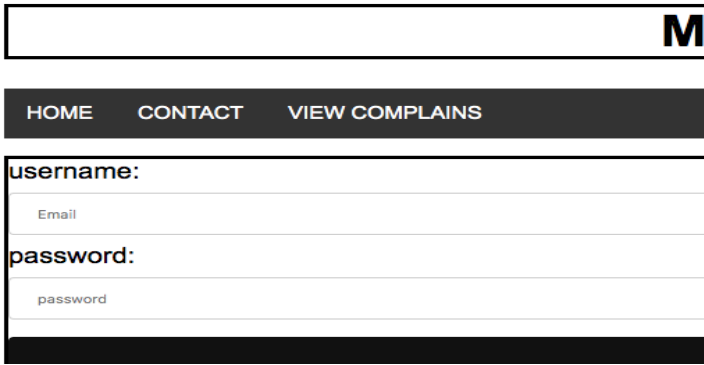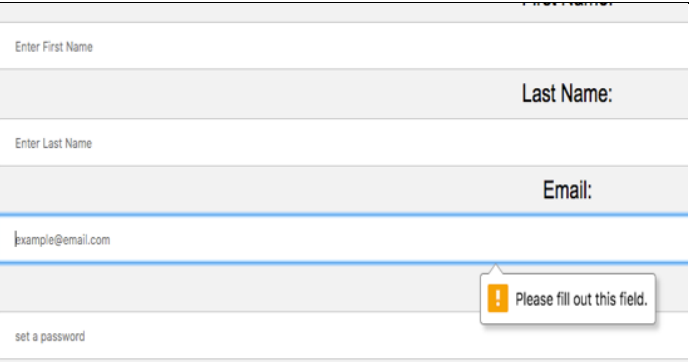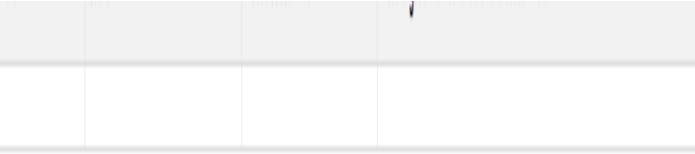
2.3.9 View Complaints Status where "PENDING" for admin

Once a complaint added by Complainer, it will display in Admin homepage. Status will be "PENDING".

Ministry of Education

| HOME | VIEW ALL COMPLAINTS | VIEW ALL USERS | MESSAGES | LOG OUT |

Welcome ashif

ID	Complainer	School Name	City	District	Type	Complaint Details	Status	Action
20	kili	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	PENDING	ACCEPT REJECT

"ViewAllComplaintAdmin" Servlet

```java
private void getAllComplains(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
{
    DAO dao= new DAO();
    List<Complaint>  complains=dao.getAllComplains();
    request.setAttribute("COM_LIST",complains);

    RequestDispatcher dispatcher=request.getRequestDispatcher("AdminHomePage.jsp");
    dispatcher.forward(request, response);

}
```

"DAO" Method

```java
public List<Complaint> getAllComplains()
{
    List<Complaint> complains = new ArrayList<Complaint>();
    try{
        PreparedStatement ps = connection.prepareStatement("SELECT * FROM complaint WHERE status='PENDING'");
        ResultSet rs = ps.executeQuery();

        while(rs.next())
        {
            int comid=rs.getInt("comid");
            String Email = rs.getString("Email");
            String Schoolname=rs.getString("schoolname");
            String city=rs.getString("city");
            String district=rs.getString("district");
            String type=rs.getString("type");
            String description=rs.getString("description");
            String status=rs.getString("status");
            Complaint allcomplains = new Complaint(comid,Email,Schoolname,city,district,type,description,status);
            complains.add(allcomplains);
        }
    }
    catch (Exception e)
    {
        e.printStackTrace();
    }
    return complains;
}
```

2.3.10 Accept/Reject Complaints by Admin

Admin can accept and reject added complaints. If Admin accepted the complaint it will make "status" as null. If rejected, complaint will be remove from "complaint" table.

Ministry of Education

| HOME | VIEW ALL COMPLAINTS | VIEW ALL USERS | MESSAGES | LOG OUT |

Welcome ashif

ID	Complainer	School Name	City	District	Type	Complaint Details	Status	Action
20	kili	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	PENDING	ACCEPT REJECT

"DAO" Method

```java
public void RejectComplaint(String comid)
{
    try
    {
        PreparedStatement ps = connection.prepareStatement("DELETE FROM complaint WHERE comid=?");
        ps.setString(1, comid);
        ps.executeUpdate();
    }
    catch(SQLException ex)
    {
        Logger.getLogger(DAO.class.getName()).log(Level.SEVERE,null,ex);
    }
}
public void AcceptComplaint(String comid)
{
    try
    {
        PreparedStatement ps=connection.prepareStatement("UPDATE complaint SET status=? WHERE comid=?");
        ps.setString(1, "");
        ps.setString(2, comid);
        ps.executeUpdate();
    }
    catch(SQLException ex)
    {
        Logger.getLogger(DAO.class.getName()).log(Level.SEVERE,null,ex);
    }
}
```
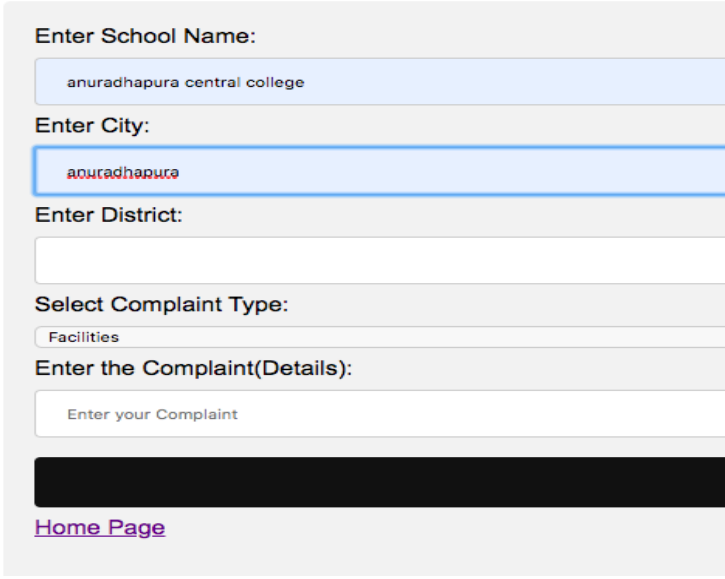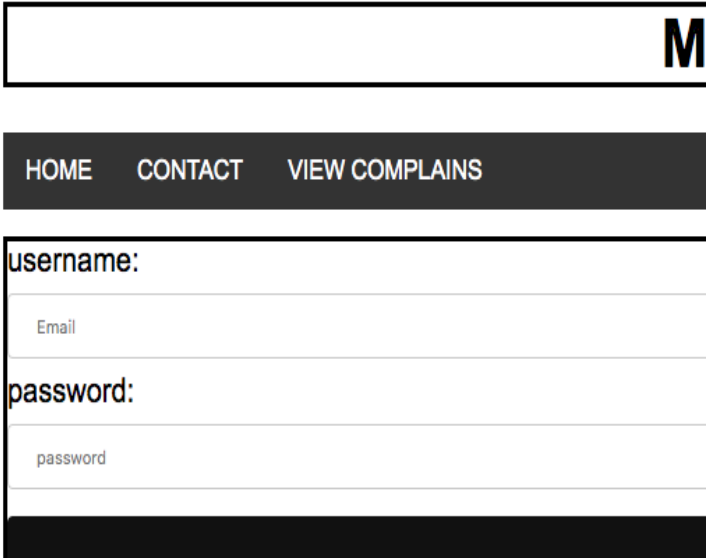
"ViewAllComplaintAdmin" Servlet

```java
public void ComplaintReject(HttpServletRequest request, HttpServletResponse response) throws Exception
{
    DAO dao = new DAO();

    String comid = request.getParameter("comid");

    dao.RejectComplaint(comid);

    RequestDispatcher dispatcher = request.getRequestDispatcher("AdminHomePage.jsp");
    dispatcher.forward(request, response);
    getAllComplains(request,response);
}
public void ComplaintAccept(HttpServletRequest request, HttpServletResponse response) throws Exception
{
    DAO dao = new DAO();

    String comid = request.getParameter("comID");

    dao.AcceptComplaint(comid);

    RequestDispatcher dispatcher = request.getRequestDispatcher("AdminHomePage.jsp");
    dispatcher.forward(request, response);
    getAllComplains(request,response);
}
```

2.3.11 Manage users(Admin)

Admin can view and delete all the users including complaint handlers.

"DAO" Method

```java
public List<User> getAllUsers()
{
    List<User> users = new ArrayList<User>();
    try{
        PreparedStatement ps = connection.prepareStatement("SELECT * FROM users");
        ResultSet rs = ps.executeQuery();

        while(rs.next()){
            String firstname= rs.getString("firstname");
            String lastname= rs.getString("lastname");
            String Email = rs.getString("Email");
            String password = rs.getString("password");
            String role=rs.getString("role");
            int number = rs.getInt("number");
            User myUser = new User(firstname,lastname,Email,password,role,number);
            users.add(myUser);
        }
    }catch (Exception e)
    {
        e.printStackTrace();
    }
    return users;
}
```

"ViewAllUsers" Servlet

```java
private void ListUsers(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
{

    DAO dao = new DAO();

    List<User> users = dao.getAllUsers();
    request.setAttribute("USER_LIST", users);

    RequestDispatcher dispatcher = request.getRequestDispatcher("Listuser.jsp");
    dispatcher.forward(request, response);

    response.sendRedirect("AdminHomePage.jsp");

}
private void DeleteUser(HttpServletRequest request, HttpServletResponse response)
        throws Exception
{
    DAO dao = new DAO();

    String Email = request.getParameter("Email");

    dao.deleteUser(Email);
    ListUsers(request,response);
}
```

2.3.12 View Messages

Admin can view the messages which visitors sent using contact.

Ministry of Education

HOME   VIEW ALL COMPLAINTS   VIEW ALL USERS   MESSAGES   LOG OUT

Welcome null

Full Name	Email	Subject	Message
ashif	ashif@gmail.com	teaching	will i get a job
ashif	ashif@gmail.com	teaching	will i get a job
ashif	ashif@gmail.com	teaching	will i get a job
leo messi	leomessi@gmail.com	about soccer unit	we need a soccer field
leo messi	leomessi@gmail.com	about soccer unit	will i get a job
Luis	Suarez	About Soccer File	need a good maintenance of the soccer field

"DAO" Method

```java
public List<Contact> getAllMessages()
{
    List<Contact> contact = new ArrayList<Contact>();
    try{
        PreparedStatement ps = connection.prepareStatement("SELECT * FROM Contact");
        ResultSet rs = ps.executeQuery();

        while(rs.next())
        {
            String fullname = rs.getString("fullname");
            String Email=rs.getString("Email");
            String subject=rs.getString("subject");
            String message=rs.getString("message");

            Contact allmessages = new Contact(fullname,Email,subject,message);
            contact.add(allmessages);
        }
    }
    catch (Exception e)
    {
      e.printStackTrace();
    }
    return contact;
}
```

"ShowMessage" Servlet

```java
private void ListMessages(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException
{
    DAO dao= new DAO();
    List<Contact> contact=dao.getAllMessages();
    request.setAttribute("M_LIST",contact);

    RequestDispatcher dispatcher=request.getRequestDispatcher("GetMessage.jsp");
    dispatcher.forward(request, response);

}
```

2.3.13 View All complaints (Previous complaints)

<table>
<tr><td colspan="8" align="center">Ministry of Education</td></tr>
<tr><td colspan="8">HOME   VIEW ALL COMPLAINTS   VIEW ALL USERS   MESSAGES   LOG OUT</td></tr>
</table>

ID	Complainer	School Name	City	District	Type	Complaint Details	Status
1	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	COMPLETED
3	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	facilities	NEED A GOOD DRAINAGE SYSTEM	IN-PROGRESS
7	leo	ROYAL COLLEGE	anuradhapura	anuradhapura	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	OUT OF SCOPE
8	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	facilities	need another IT building	COMPLETED
9	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	OUT OF SCOPE
10	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	facilities	NEED A GOOD DRAINAGE SYSTEM	OUT OF SCOPE
12	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	facilities	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	COMPLETED
13	tony	AMAL INTERNATIONAL	COLOMBO	COLOMBO	student's discipline	STUDENTS CALL PRINCIPLE "PINA".......	COMPLETED
14	leo	ZAHIRA COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHERS TALK TO MUCH	COMPLETED
16	tony	AMAL INTERNATIONAL	COLOMBO	COLOMBO	facilities	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	COMPLETED
18	khalid	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	COMPLETED
20	kili	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	PENDING

"DAO" Method

```java
public List<Complaint> getAllcompletedcomplaintsforadmin()
{
    List<Complaint> complains = new ArrayList<Complaint>();
    try{
        PreparedStatement ps = connection.prepareStatement("SELECT * FROM complaint");
        ResultSet rs = ps.executeQuery();

        while(rs.next())
        {
            int comid=rs.getInt("comid");
            String Email = rs.getString("Email");
            String Schoolname=rs.getString("schoolname");
            String city=rs.getString("city");
            String district=rs.getString("district");
            String type=rs.getString("type");
            String description=rs.getString("description");
            String status=rs.getString("status");
            Complaint allcomplains = new Complaint(comid,Email,Schoolname,city,district,type,description,status);
            complains.add(allcomplains);
        }
    }
    catch (Exception e)
    {
        e.printStackTrace();
    }
    return complains;
}
```

"OldComplaintsAdmin" Servlet

```java
public void viewAllComplaintsAdmin(HttpServletRequest request, HttpServletResponse response) throws Exception
{
    DAO dao= new DAO();
    List<Complaint> complains=dao.getAllcompletedcomplaintsforadmin();
    request.setAttribute("ALL_COM",complains);

    RequestDispatcher dispatcher=request.getRequestDispatcher("ViewAllComplaintsAdmin.jsp");
    dispatcher.forward(request, response);
}
```

2.3.14 Set complaint Status (Complaint Handler)

After Admin accepting complaint, it will direct to Complaint handler. So, complaint handler can set the status to "COMPLETED","IN-PROGRESS" or "OUT OF SCOPE". After admin accepting complaint status changes from "PENDING" to null. Then after complaint can set the status.

Ministry of Education

HOME   SEARCH COMPLAINTS   LOG OUT

Welcome sanju

ID	Complainer	School Name	City	District	Type	Complaint Details	Action	Status
1	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	COMPLETED: ☐ IN-PROGRESS: ☐ OUT OF SCOPE: ☐ submit	COMPLETED
3	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	facilities	NEED A GOOD DRAINAGE SYSTEM	COMPLETED: ☐ IN-PROGRESS: ☐ OUT OF SCOPE: ☐ submit	IN-PROGRESS
7	leo	ROYAL COLLEGE	anuradhapura	anuradhapura	teacher's discipline	TEACHER MOSTLY USING PHONE DURING THE LECTURE TIME	COMPLETED: ☐ IN-PROGRESS: ☐ OUT OF SCOPE: ☐ submit	OUT OF SCOPE
8	leo	ROYAL COLLEGE	COLOMBO	COLOMBO	facilities	need another IT building	COMPLETED: ☐ IN-PROGRESS: ☐ OUT OF SCOPE: ☐	COMPLETED

"DAO" Method

```java
public void ChangeStatus(String comid,String status)
{
    try
    {
        PreparedStatement ps=connection.prepareStatement("UPDATE complaint SET status=? WHERE comid=?");
        ps.setString(1, status);
        ps.setString(2, comid);
        ps.executeUpdate();
    }
    catch(SQLException ex)
    {
        Logger.getLogger(DAO.class.getName()).log(Level.SEVERE,null,ex);
    }
}
```

```java
public List<Complaint> getNotPendingComplaints()
{
    List<Complaint>complaints=new ArrayList<Complaint>();

try
{
    PreparedStatement ps=connection.prepareStatement("SELECT * FROM complaint WHERE status!='PENDING'");
    ResultSet rs=ps.executeQuery();
    while(rs.next())
    {
        int comid=rs.getInt("comid");
        String Email=rs.getString("Email");
        String Schoolname=rs.getString("schoolname");
        String city=rs.getString("city");
        String district=rs.getString("district");
        String type=rs.getString("type");
        String description=rs.getString("description");
        String status=rs.getString("status");
        Complaint notpending=new Complaint(comid,Email,Schoolname,city,district,type,description,status);
        complaints.add(notpending);


    }

}
```

"ViewComplaintHandler" Servlet

```java
public void setStatus (HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException
{
    DAO dao= new DAO();

    String comid=request.getParameter("comid");
    String status=request.getParameter("status");

    switch(status)
    {
        case"1":
        {
            status="COMPLETED";
            dao.ChangeStatus(comid, status);
            break;
        }
        case"2":
        {
            status="IN-PROGRESS";
            dao.ChangeStatus(comid, status);
            break;
        }
        case"3":
        {
            status="OUT OF SCOPE";
            dao.ChangeStatus(comid, status);
            break;
        }
        default:
            break;


    }
    ViewNotPendingComplaints(request,response);

}

private void ViewNotPendingComplaints (HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException
{
    DAO dao= new DAO();

    List<Complaint>complaints=dao.getNotPendingComplaints();

    request.setAttribute("COMH_LIST", complaints);
    RequestDispatcher dispatcher=request.getRequestDispatcher("ComplaintHandlersHomePage.jsp");
    dispatcher.forward(request, response);


}
```

2.3.15 Search Complaints (Complaint Handler)

Complaint Handler can search complaints using Complaint ID (comid).

Ministry of Education							

HOME   SEARCH COMPLAINTS   LOG OUT

Enter Complaint ID

Submit

ID	Complainer	School Name	City	District	Type	Complaint Details	Status

"SearchCHandler" Servlet
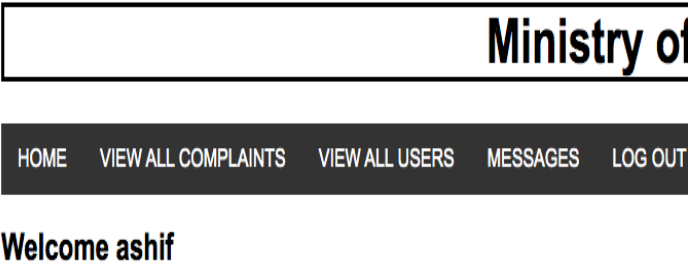
```java
public class SearchCHandler extends HttpServlet
{
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException
    {

        try {
            DAO dao= new DAO();
            String Comid=request.getParameter("comid");
            List<Complaint> complains;
            complains = dao.SearchComplaintsComplaintHandler(Comid);
            request.setAttribute("SEARCH", complains);
            RequestDispatcher dispatcher=request.getRequestDispatcher("searchHandler.jsp");
            dispatcher.forward(request, response);
        } catch (SQLException ex) {
            Logger.getLogger(SearchCHandler.class.getName()).log(Level.SEVERE, null, ex);
        }

    }
```

"DAO" Method
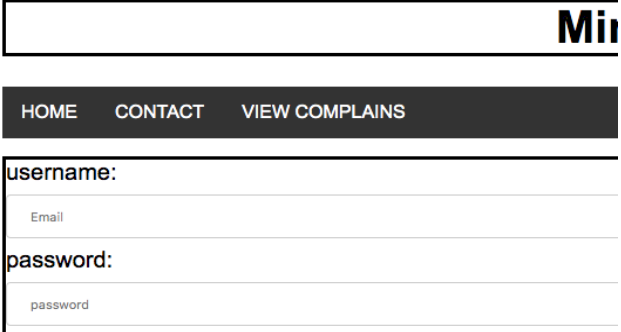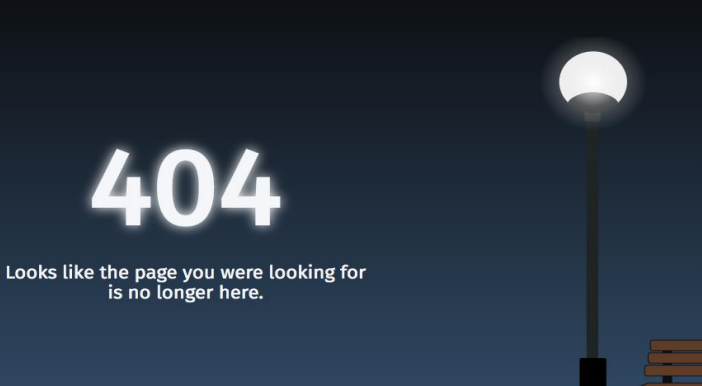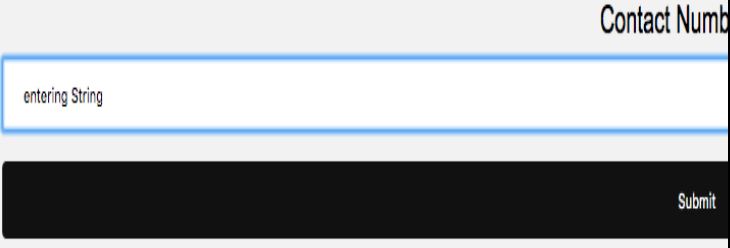
```java
public List<Complaint> SearchComplaintsComplaintHandler(String Comid) throws SQLException
{
    List<Complaint> complains = new ArrayList<Complaint>();
    try
    {
    PreparedStatement ps = connection.prepareStatement("SELECT * FROM complaint WHERE comid=?");
    ps.setString(1, Comid);
    ResultSet rs=ps.executeQuery();

    while(rs.next())
    {
        int comid=rs.getInt("comid");
        String Email = rs.getString("Email");
        String Schoolname=rs.getString("schoolname");
        String city=rs.getString("city");
        String district=rs.getString("district");
        String type=rs.getString("type");
        String description=rs.getString("description");
        String status=rs.getString("status");
        Complaint allcomplains = new Complaint(comid,Email,Schoolname,city,district,type,description,status);
        complains.add(allcomplains);
    }
    }
    catch(Exception e)
    {
        e.printStackTrace();
    }
    return complains;
}
```

2.4 Testing

Test Case ID	Purpose	Prerequisites	Steps	Expected Result	Actual Result	Result
TC 001	Log in	System is up and Running	1.Enter valid Email & Password 2.click "Login"	Successful log in	Ministry of HOME VIEW ALL COMPLAINTS VIEW ALL USERS MESSAGES LOG OUT Welcome ashif	Pass
TC 002	Log in with invalid Credentials	System is up and Running	1.Enter invalid Email & Password 2.clikc "Login"	Error Message	Sorry,Inavlid username or Password M HOME CONTACT VIEW COMPLAINS username: Email password: password	Pass
TC 003	Clicking Register form without filling anything.	System is up and Running	1.Click Register 2.Click Submit	"Please fill out this field" Message	Enter First Name Last Name: Enter Last Name Email: example@email.com Please fill out this field. set a password	Pass
TC 004	Sending null message to Admin	System is up and Running	1.Click contact 2.sumit witho	Null messages will not displa	Admin receives Empty messages	Fail

	using contact		ut filling anything	y for admin		
TC 005	Admin accepts complaint	System is up and Running	1.Accept pending complaint	Status of complaint will be null	(2nd column) Status become null TEACHER MOSTLY USING PHONE DURIN...	Pass
TC 006	Admin Deletes Complaint	System is up and Running	1.delete pending complaint	Complaint will have removed from the database	Deleted from complaint table	Pass
TC 006	Admin Deleted Users	System is up and Running	1.click "delete user"	1.User details will have removed from Database	Deleted from "users" Table	Pass
TC 007	Register to the system	System is up and Running	1.click Register 2.fill the form 3.submit	1.user details will save in "users" table	User details saved in the "users" Table	pass

TC 008	Log out	System is up and Running	1.click log out	1.users will be logged out from the account	you are successfully Logged Out Mi HOME CONTACT VIEW COMPLAINS username: Email password: password	Pass
TC 009	Error page	System is up and Running	1.change the URL to invalid path	1.System directs to Error page	404 Looks like the page you were looking for is no longer here.	Pass
TC 010	Entering String value to Phone number in Register	System is up and Running	1.Enter String in Phone number	1. Error message	Registered with String value Contact Numb entering String Submit	Fail

TC 011	Entering null values for Complaint form	System is up and Running	1.Enter null for complaint form	1.error message	Submitted with null values Enter School Name: anuradhapura central college Enter City: anuradhapura Enter District: Select Complaint Type: Facilities Enter the Complaint(Details): Enter your Complaint Home Page	Fail
TC 012	Entering null to Username and password	System is up and Running	1.Enter null to login credentials 2.click log in	1.error message	Sorry,Inavlid username or Password M HOME CONTACT VIEW COMPLAINS username: Email password: password	Pass

TC 013	Enter string in search com id bar	System is up and Running	1.enter string 2.click "submit"	1.error messa ge		Fail
TC 014	Chang e status of alread y chang ed compl aint	System is up and Running	1.sele ct status type	1.stat us will chang e	Status changed from the previous status	Pass
TC 015	View compl eted compl aints for visitor	System is up and Running	1.clik c view compl aints	View compl aints		Pass

TC 016	View added complaints for complainer	System is up and Running	1.click added complaints	View complaints		Pass
TC 017	View all complaints for admin	System is up and Running	1.click view all complaints	View all complaints		Pass
TC 018	View all users for admin	System is up and Running	1.click view all users	Viewing all users		Pass

TC 019	View visitor messages for admin	System is up and Running	1.click messages	View messages		Pass
TC 020	View accepted complaints for Complaint handler	System is up and Running	1.log in as complaint handler	View accepted complaints		Pass
TC 021	View list select complaint type	System is up and Running	1.select drop list of select complaint Type	View drop list		Pass

TC 022	View add complaint form	System is up and Running	1.click "add c complaint"	View form		Pass
TC 023	View contact form for visitor	System is up and Running	Click contact	View form		Pass
TC 024	Complaint directs to visitor after complaint Handler adding status	System is up and Running	Click view complaints	View complaints		Pass

0.3 Conclusion

3.1 Reflection

This project is based on to solve the student educational issues. so, by adding complaints government can take actions to their issues. I gathered useful knowledge about Handling JSP, JSTL and CSS.

3.2 Strengths and Weaknesses

Strengths	Weaknesses
Helps students to complaint about their Education issues directly.	Can't verify the added complaints accurate or not.
Eye catching Graphical frontend	No Firewall protection

3.3 Future Enhancement

Future of this Project directs to verify the adding complaint method more accurate.