**Sample Code**

**SQL Connection:**

package DBconnection;

import java.sql.Connection;

import java.sql.DriverManager;

public class SQLconnection {

static Connection con;

public static Connection getconnection() {

try {

Class.forName("com.mysql.jdbc.Driver");

con = DriverManager.getConnection("jdbc:mysql://localhost:3306/ehr", "root", "root");

} catch (Exception e) {

}

return con;

}

}

**Cloud.java:**

package EHR;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class Cloud extends HttpServlet {

protected void processRequest(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

response.setContentType("text/html;charset=UTF-8");

try (PrintWriter out = response.getWriter()) {

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

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

System.out.println("=======================================" +name +pass);

if (name.equalsIgnoreCase("cloud") && pass.equalsIgnoreCase("cloud")) {

response.sendRedirect("Cloud\_Home.jsp?Success");

} else {

response.sendRedirect("Cloud\_login.jsp?Failed");

}

} catch (Exception ex) {

}

}

// <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit the code.">

@Override

protected void doGet(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

processRequest(request, response);

}

@Override

protected void doPost(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

processRequest(request, response);

}

@Override

public String getServletInfo() {

return "Short description";

}// </editor-fold>

}

**Decription.java:**

package EHR;

import com.sun.org.apache.xerces.internal.impl.dv.util.Base64;

import java.io.ByteArrayOutputStream;

import java.io.FileInputStream;

import java.io.FileWriter;

import java.util.Scanner;

import javax.crypto.Cipher;

import javax.crypto.KeyGenerator;

import javax.crypto.SecretKey;

import javax.crypto.spec.SecretKeySpec;

import javax.swing.JOptionPane;

import sun.misc.BASE64Decoder;

import sun.misc.BASE64Encoder;

public class Decryption

{

public String decrypt(String txt,String skey)

{

String decryptedtext = null;

try

{

//converting string to secretkey

byte[] bs=Base64.decode(skey);

SecretKey sec=new SecretKeySpec(bs, "AES");

System.out.println("converted string to seretkey:"+sec);

System.out.println("secret key:"+sec);

Cipher aesCipher = Cipher.getInstance("AES");//getting AES instance

aesCipher.init(Cipher.ENCRYPT\_MODE,sec);//initiating ciper encryption using secretkey

byte[] byteCipherText =new BASE64Decoder().decodeBuffer(txt); //encrypting data

// System.out.println("ciper text:"+byteCipherText);

aesCipher.init(Cipher.DECRYPT\_MODE,sec,aesCipher.getParameters());//initiating ciper decryption

byte[] byteDecryptedText = aesCipher.doFinal(byteCipherText);

decryptedtext = new String(byteDecryptedText);

System.out.println("Decrypted Text:"+decryptedtext);

}

catch(Exception e)

{

System.out.println(e);

}

return decryptedtext;

}

}

**Download.java:**

package EHR;

import DBconnection.SQLconnection;

import static com.sun.org.apache.xerces.internal.xinclude.XIncludeHandler.BUFFER\_SIZE;

import java.io.IOException;

import java.io.InputStream;

import java.io.OutputStream;

import java.io.PrintWriter;

import java.sql.Blob;

import java.sql.Connection;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.sql.Statement;

import java.util.logging.Level;

import java.util.logging.Logger;

import javax.servlet.ServletContext;

import javax.servlet.ServletException;

import javax.servlet.ServletOutputStream;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

public class Download extends HttpServlet {

protected void processRequest(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

response.setContentType("text/html;charset=UTF-8");

try (PrintWriter out = response.getWriter()) {

String fileid = request.getParameter("fid");

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

System.out.println("Fileid===" + fileid);

HttpSession user = request.getSession();

String mid = user.getAttribute("mid").toString();

String mname = user.getAttribute("mname").toString();

String mmail = user.getAttribute("mmail").toString();

String mrole = user.getAttribute("mrole").toString();

Connection conn = SQLconnection.getconnection();

Statement st = conn.createStatement();

Statement st1 = conn.createStatement();

Statement st2 = conn.createStatement();

ResultSet rs = st2.executeQuery(" Select \* from request where fid ='" + fileid + "' AND status='Approved' AND dkey='" + dkey + "'");

if (rs.next()) {

String filename = rs.getString("filename");

ResultSet rs1 = st.executeQuery(" Select \* from data\_files where id ='" + fileid + "' AND filename ='" + filename + "' AND dkey='" + dkey + "'");

if (rs1.next()) {

String doid = rs1.getString("mid");

String doname = rs1.getString("mname");

String file = rs1.getString("enc\_data");

String file1 = rs1.getString("data");

System.out.println("dkey-- " + dkey);

long aTime = System.nanoTime();

Decryption d1 = new Decryption();

String decrypted = d1.decrypt(file, dkey);

long bTime = System.nanoTime();

float decryptTime = (bTime - aTime) / 1000;

System.out.print("\nPlain Text -------- " + file);

System.out.print("\nDecrypted Text -------- " + decrypted);

System.out.println("Time taken to Decrypt File: " + decryptTime + " microseconds.");

System.out.println("filename,fileid==" + filename + fileid);

String is = decrypted;

response.setHeader("Content-Disposition", "attachment;filename=\"" + filename + "\"");

out.write(file1);

out.close();

int i = st1.executeUpdate("insert into download (mid, mname, filename, time , fileid , doname ,doid, decrypt\_time, mrole)values('" + mid + "','" + mname + "','" + filename + "',now(),'" + fileid + "','" + doname + "','" + doid + "','" + decryptTime + "','"+ mrole +"')");

if (i != 0) {

System.out.println("Download success...");

} else {

System.out.println("error while updating information...");

}

} else {

System.out.println("file not found...");

}

} else {

response.sendRedirect("Download\_file.jsp?failed");

}

} catch (SQLException ex) {

ex.printStackTrace();

response.sendRedirect("Download\_file.jsp?download\_failed");

} catch (IOException ex) {

ex.printStackTrace();

response.sendRedirect("Download\_file.jsp?download\_failed");

}

}

// <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit the code.">

@Override

protected void doGet(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

processRequest(request, response);

}

@Override

protected void doPost(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

processRequest(request, response);

}

@Override

public String getServletInfo() {

return "Short description";

}// </editor-fold>

}

**Encription.java:**

package EHR;

import javax.crypto.Cipher;

import javax.crypto.SecretKey;

import sun.misc.BASE64Encoder;

public class Encryption

{

public String encrypt(String text,SecretKey secretkey)

{

String plainData=null,cipherText=null;

try

{

plainData=text;

Cipher aesCipher = Cipher.getInstance("AES");//getting AES instance

aesCipher.init(Cipher.ENCRYPT\_MODE,secretkey);//initiating ciper encryption using secretkey

byte[] byteDataToEncrypt = plainData.getBytes();

byte[] byteCipherText = aesCipher.doFinal(byteDataToEncrypt);//encrypting data

// System.out.println("ciper text:"+byteCipherText);

cipherText = new BASE64Encoder().encode(byteCipherText);//converting encrypted data to string

System.out.println("\n Given text : "+plainData+" \n Cipher Data : "+cipherText);

}

catch(Exception e)

{

System.out.println(e);

}

return cipherText;

}

}

**GroupMember.java:**

package EHR;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class GM\_Login extends HttpServlet {

protected void processRequest(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

response.setContentType("text/html;charset=UTF-8");

try (PrintWriter out = response.getWriter()) {

/\* TODO output your page here. You may use following sample code. \*/

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

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

System.out.println("=======================================" +name +pass);

if (name.equalsIgnoreCase("admin") && pass.equalsIgnoreCase("admin")) {

response.sendRedirect("GM\_Home.jsp?Success");

} else {

response.sendRedirect("GM\_login.jsp?Failed");

}

} catch (Exception ex) {

}

}

// <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit the code.">

@Override

protected void doGet(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

processRequest(request, response);

}

@Override

protected void doPost(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

processRequest(request, response);

}

@Override

public String getServletInfo() {

return "Short description";

}// </editor-fold>

}

**Member Registration.java:**

package EHR;

import DBconnection.SQLconnection;

import java.io.IOException;

import java.io.PrintWriter;

import java.sql.Connection;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.sql.SQLException;

import java.sql.Statement;

import javax.servlet.ServletException;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

public class Member\_register extends HttpServlet {

protected void processRequest(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

response.setContentType("text/html;charset=UTF-8");

try (PrintWriter out = response.getWriter()) {

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

String mail = request.getParameter("email");

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

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

System.out.println("name" + name + "password" + pass + "Role"+ role + "mail" + mail);

Connection conn = SQLconnection.getconnection();

String message = null;

try {

Statement st = conn.createStatement();

ResultSet rs = st.executeQuery("Select \* from member\_reg where email ='" + mail + "'");

if (rs.next()) {

response.sendRedirect("Member\_login.jsp?msg=Mail\_Id\_Exists");

} else {

String sql = "insert into member\_reg(name, email, role, password) values (?, ?, ?, ?)";

PreparedStatement statement = conn.prepareStatement(sql);

statement.setString(1, name);

statement.setString(2, mail);

statement.setString(3, role);

statement.setString(4, pass);

int row = statement.executeUpdate();

if (row > 0) {

response.sendRedirect("Member\_login.jsp?Register\_Success");

} else {

response.sendRedirect("Member\_login.jsp?Register\_Failed");

}

}

} catch (SQLException ex) {

ex.printStackTrace();

}

}

}

// <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit the code.">

@Override

protected void doGet(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

processRequest(request, response);

}

@Override

protected void doPost(HttpServletRequest request, HttpServletResponse response)

throws ServletException, IOException {

processRequest(request, response);

}

@Override

public String getServletInfo() {

return "Short description";

}

}

**Drive Network.java:**

package Networks;

import java.io.File;

import java.io.FileInputStream;

import java.io.IOException;

import org.apache.commons.net.ftp.FTPClient;

import org.apache.commons.net.ftp.FTPConnectionClosedException;

public class DRIVE\_Network {

private FTPClient client;

private FileInputStream fis;

private boolean status;

public DRIVE\_Network() {

client = new FTPClient();

}

public boolean upload(File file) {

int maxRetries = 3;

int retries = 0;

while (retries < maxRetries) {

try {

System.out.println("Connecting to the FTP server...");

client.connect("ftp.drivehq.com");

System.out.println("Connected.");

System.out.println("Logging in...");

client.login("GanapuramRamya", "Ramya@123");

System.out.println("Login successful.");

client.enterLocalPassiveMode();

// Check if the file exists and is a regular file

if (!file.exists() || !file.isFile()) {

System.out.println("File does not exist or is not a regular file.");

return false;

}

System.out.println("Uploading file: " + file.getAbsolutePath());

fis = new FileInputStream(file);

status = client.storeFile("/" + file.getName(), fis);

if (status) {

System.out.println("File uploaded successfully.");

} else {

System.out.println("File upload failed. Server response: " + client.getReplyString());

}

break; // Break out of the loop if upload is successful

} catch (FTPConnectionClosedException e) {

System.out.println("FTP Connection Closed Exception. Server response: " + client.getReplyString());

// Retry connecting after a delay

try {

Thread.sleep(5000); // 5 seconds delay

} catch (InterruptedException ex) {

ex.printStackTrace();

}

retries++;

} catch (IOException e) {

e.printStackTrace();

break; // Break out of the loop if another IOException occurs

} finally {

try {

if (fis != null) {

fis.close();

}

if (client.isConnected()) {

System.out.println("Logging out and disconnecting from the FTP server...");

client.logout();

client.disconnect();

}

} catch (IOException e) {

e.printStackTrace();

}

}

}

return status;

}

}