INFO6250 Web Development Tools & Methds SEC 06 ——Mini Slack

I. Summary

In the past few days, I developed a software application by using SpringMVC, Hibernate, Annotation, JavaScript, CSS. There are two roles, teachers and students that can register and activate new user, retrieve password by using e-mail, update basic information and password, manage and send messages with each other and upload files to whoever you want.

II. Key Functionalities

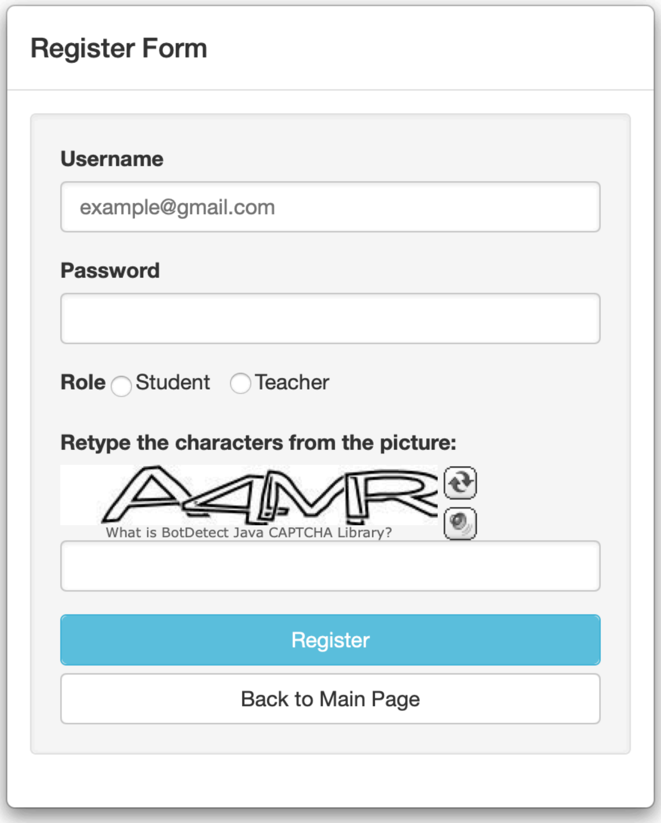
- Register new user by E-mail address and activate it using links attached with e-mail
- Update basic information based on different roles after login
- Show updated information just
- Update password
- Retrieve password by using registered e-mail
- Send messages and file(less than 5M) to specified user with different topics
- Delete history record

III. Key Technologies

- SpringMVC
- Hibernate
- Annotation Mapping
- JavaScript
- CSS

IV. Screenshots

- Signup Page



Register Form

Username

example@gmail.com

Password

Role ○ Student ○ Teacher

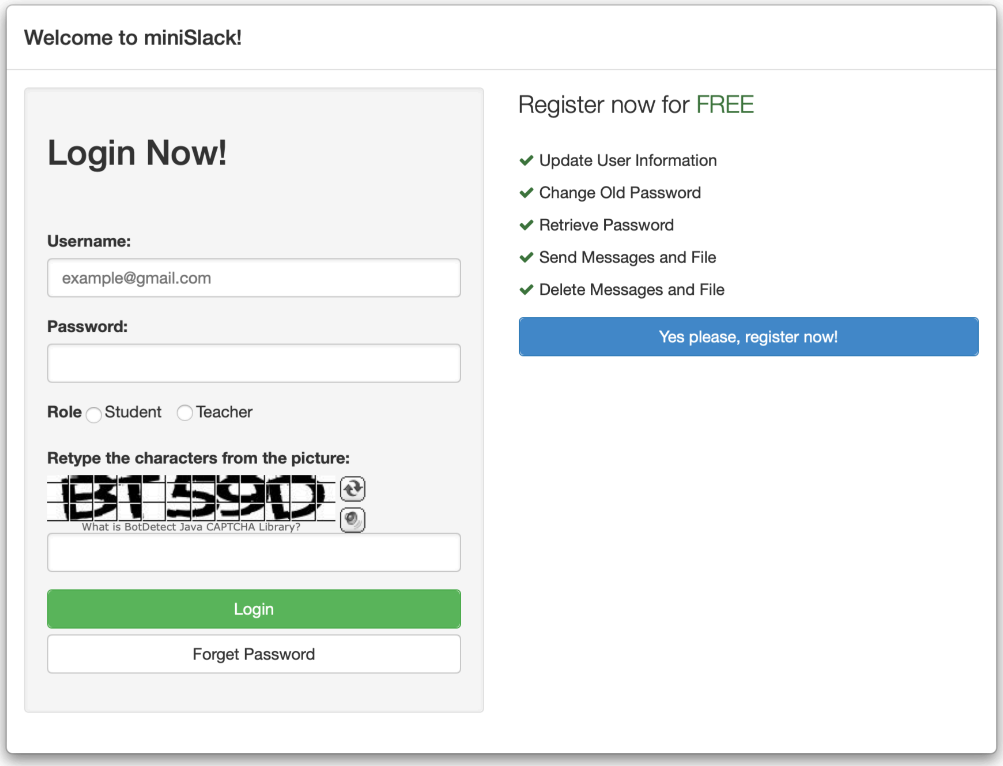
Retype the characters from the picture:

What is BotDetect Java CAPTCHA Library?

Register

Back to Main Page

- Login Page



Welcome to miniSlack!

Login Now!

Username:

example@gmail.com

Password:

Role ○ Student ○ Teacher

Retype the characters from the picture:

What is BotDetect Java CAPTCHA Library?

Login

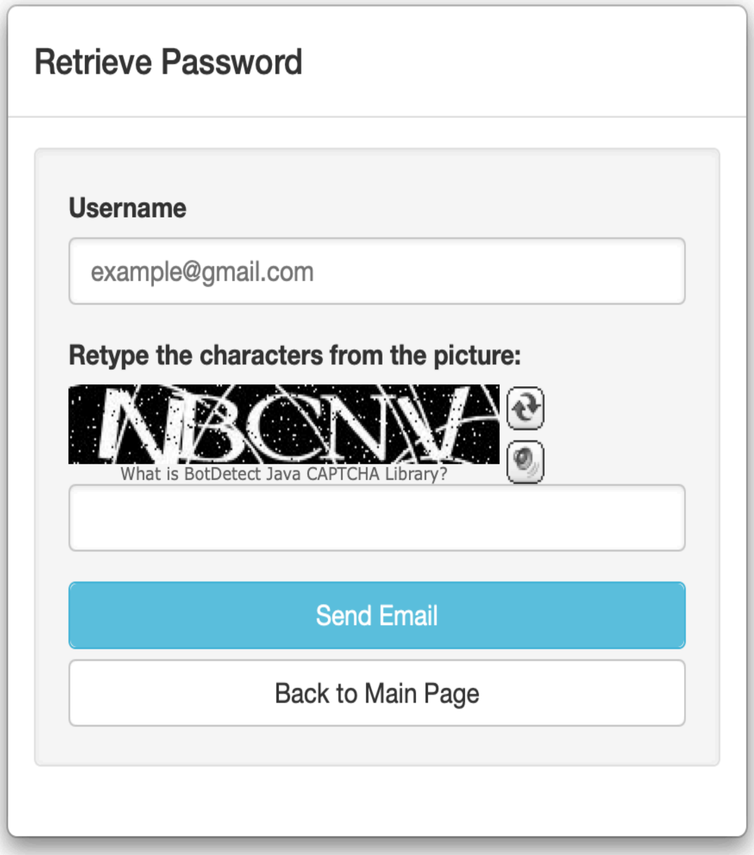
Forget Password

Register now for FREE

- ✓ Update User Information
- ✓ Change Old Password
- ✓ Retrieve Password
- ✓ Send Messages and File
- ✓ Delete Messages and File

Yes please, register now!

- Retrieve Password

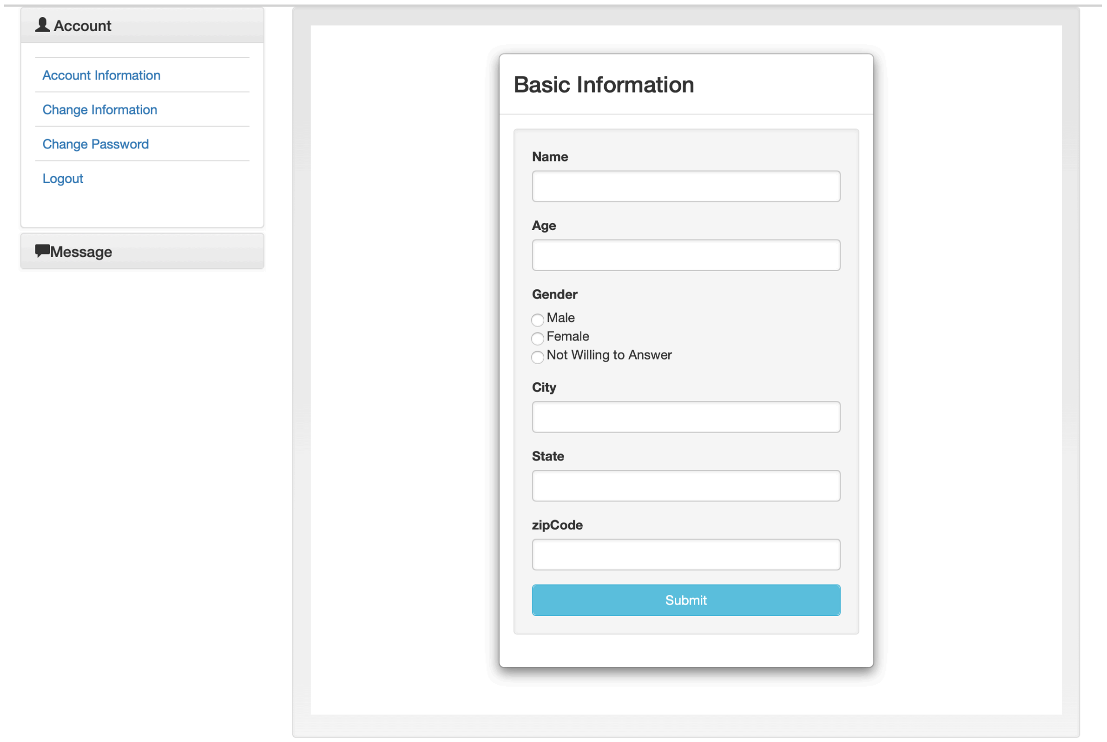

Retrieve Password

Username

example@gmail.com

Retype the characters from the picture:

- Update new Information



Basic Information

Name

Age

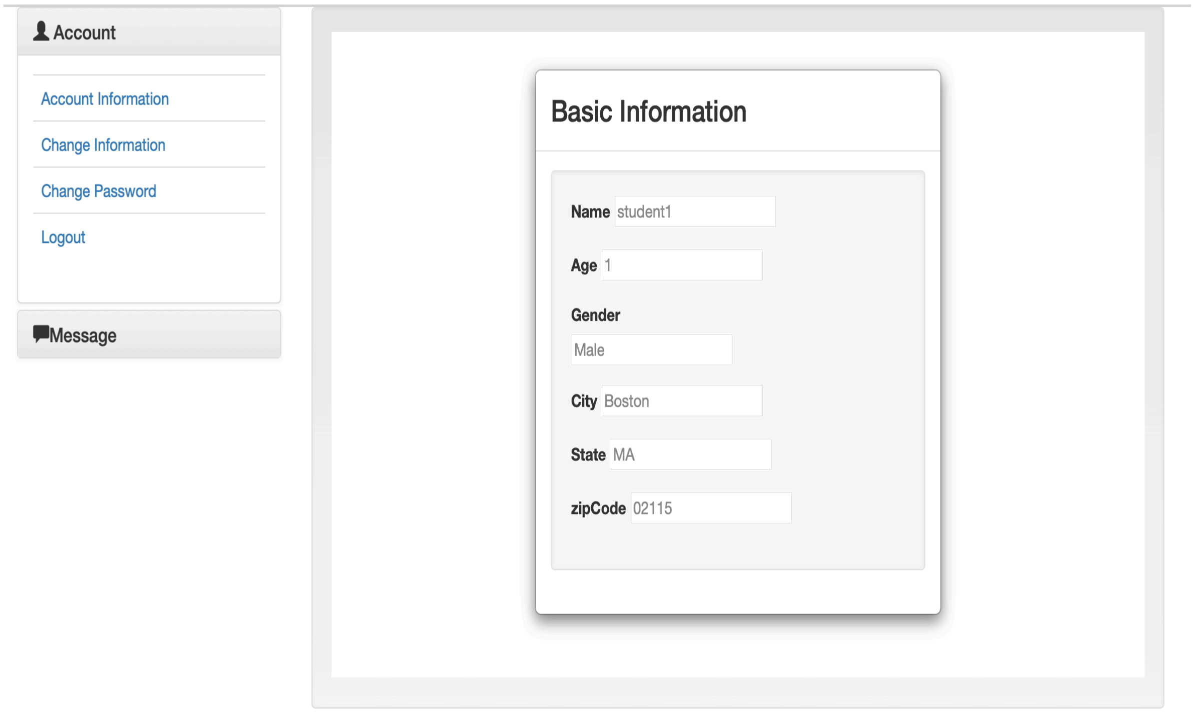
Gender
Male
Female
Not Willing to Answer

City

State

zipCode

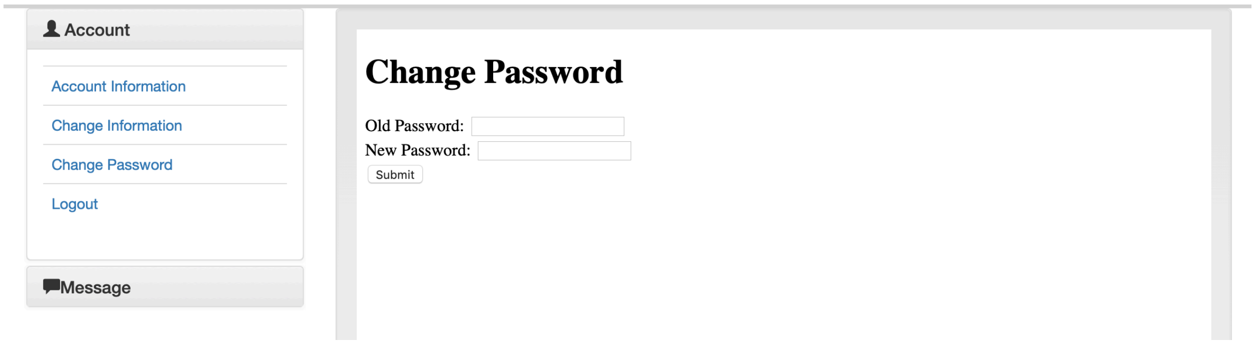
- Show basic information



Basic Information

Name	student1
Age	1
Gender	Male
City	Boston
State	MA
zipCode	02115

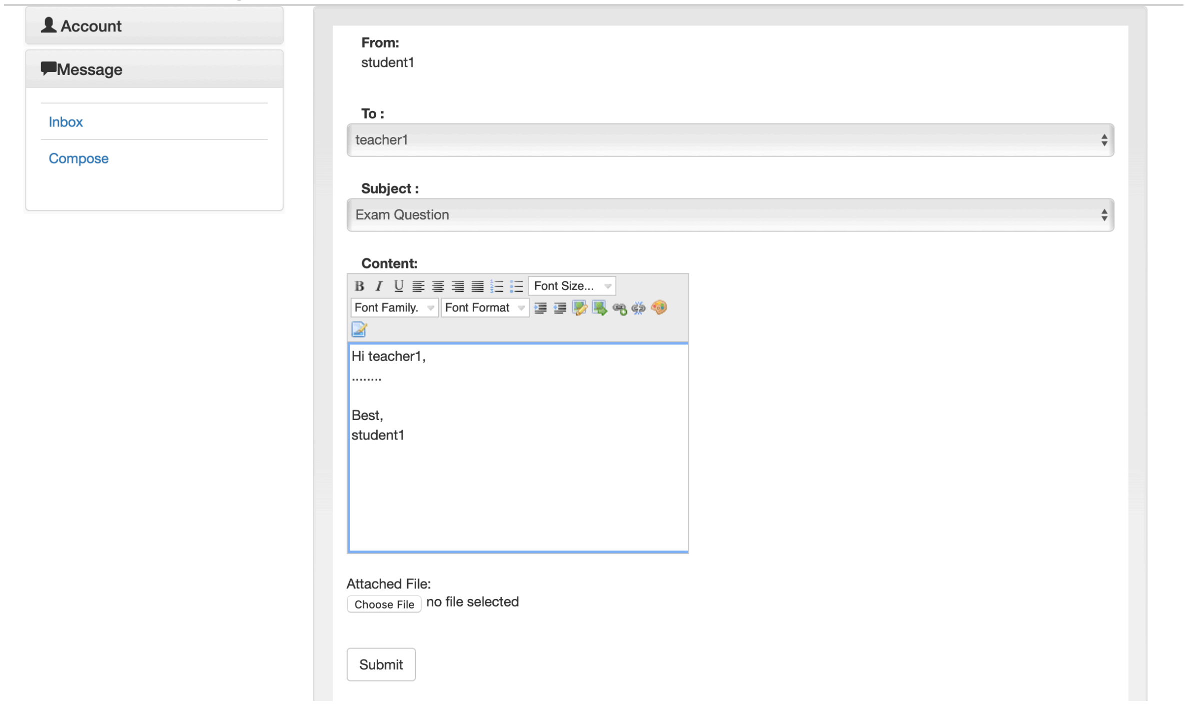
- Change old password



Change Password

Old Password:
New Password:
Submit

- Send messages and file



From:
student1

To :
teacher1

Subject :
Exam Question

Content:
Font Size... Font Family. Font Format

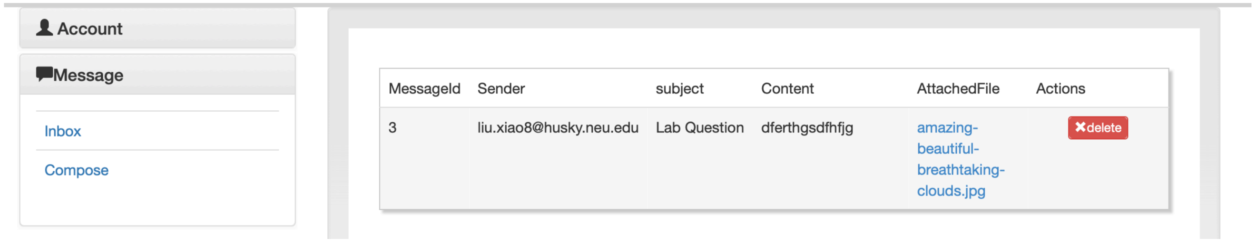
Hi teacher1,
....

Best,
student1

Attached File:
Choose File no file selected

Submit

- Manage messages



MessageId	Sender	subject	Content	AttachedFile	Actions
3	liu.xiao8@husky.neu.edu	Lab Question	dferthgsdfhfjg	amazing-beautiful-breathtaking-clouds.jpg	delete

V. Appendix

- **HomeController.java**

```
package com.mywork.finalproject.controller;

import com.captcha.botdetect.web.servlet.Captcha;
import java.util.ArrayList;
import java.util.Locale;
import java.util.Random;
import java.util.logging.Level;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpSession;
import org.apache.commons.mail.DefaultAuthenticator;
import org.apache.commons.mail.Email;
import org.apache.commons.mail.EmailException;
import org.apache.commons.mail.SimpleEmail;
import org.slf4j.Logger;
import org.slf4j.LoggerFactory;
import org.springframework.stereotype.Controller;
import org.springframework.ui.ModelMap;

import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import com.mywork.finalproject.dao.UserDAO;
import com.mywork.finalproject.pojo.Student;
import com.mywork.finalproject.pojo.Teacher;
import com.mywork.finalproject.pojo.User;

/**
 * Handles requests for the application home page.
 */

@Controller
public class HomeController {

	private static final Logger logger = 
LoggerFactory.getLogger(HomeController.class);

	/**
	 * Simply selects the home view to render by returning its name.
	 */
	@RequestMapping(value = "/user/register.htm", method = 
RequestMethod.GET)
```

```
        public String home() {
                return "userRegisterForm";
        }

        @RequestMapping(value = "/user/register.htm", method =
RequestMethod.POST)
   public String handleRegisterForm(HttpServletRequest request, UserDAO
userDao, ModelMap map){
      String username = request.getParameter("username");


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

      Captcha captcha = Captcha.load(request, "CaptchaObject");
      String captchaCode = request.getParameter("captchaCode");

      if(userDao.get(username)!=null){
         map.addAttribute("errorMessage", "This Email has been registered!");
         return "error";
      }

      if(captcha.validate(captchaCode))
      {
         HttpSession session = request.getSession();
         User user = new User();
         if (role.equals("student"))
         {
                 user = new Student();
         }
         else if (role.equals("teacher"))
         {
                 user = new Teacher();
         }

         user.setUsername(username);
         user.setPassword(password);
      user.setStatus(0);//0 代表未激活，1 代表已激活

      try{
        User u = userDao.register(user);
        Random rand = new Random();
        int randomNum1 = rand.nextInt(5000000);
        int randomNum2 = rand.nextInt(5000000);
        try{
          String str =
"http://localhost:8080/finalproject/user/validateemail.htm?username=" +
username + "&key1="
                                        + randomNum1 + "&key2=" +
randomNum2 + "&role=" + role;
          session.setAttribute("newUser", u);
          session.setAttribute("key1", randomNum1);
          session.setAttribute("key2", randomNum2);
          sendEmail(username, "Click on this link to activate your account : " +
str);
        }catch(Exception e){
          System.out.println("Email cannot be sent");
        }
      }catch(Exception e){
        e.printStackTrace();
      }
    }else{
      map.addAttribute("errorMessage", "Invalid Captcha!");
      return "userRegisterForm";
    }
    return "userCreated";
  }

  public void sendEmail(String useremail, String message) {
    try {
      Email email = new SimpleEmail();
      email.setHostName("smtp.googlemail.com");
      email.setSmtpPort(465);
```

```
            email.setAuthenticator(new
DefaultAuthenticator("kuku.xiao1026@gmail.com", "sb4827590"));
            email.setSSLOnConnect(true);
            email.setFrom("kuku.xiao1026@gmail.com"); // This user email does not
exist.
            email.setSubject("INFO6250 FinalProjrct");
            email.setMsg(message); // Retrieve email from the DAO and send this
            email.addTo(useremail);
            email.send();

        } catch (EmailException ex) {

java.util.logging.Logger.getLogger(HomeController.class.getName()).log(Level.SEV
ERE, null, ex);
        }
    }

    @RequestMapping(value = "/user/login.htm", method = RequestMethod.GET)
    public String showLoginForm() {
        return "home";
    }

    @RequestMapping(value = "/user/login.htm", method = RequestMethod.POST)
    public String handleLoginForm(HttpServletRequest request, UserDAO userDao,
ModelMap map){
        String username = request.getParameter("username");
        String password = request.getParameter("password");

        try{
            User user = userDao.get(username, password);
            if(user != null && user.getStatus() == 0)
            {
                map.addAttribute("errorMessage", "Please activate your account to
login!");
                return "error";
            }
            else if(user != null && user.getStatus() == 1)
    {
       HttpSession session = request.getSession();
       session.setAttribute("user", user);
       if (user instanceof Student)
       {
            session.removeAttribute("list");
            ArrayList<User> list = userDao.getAll();
            for(int i=0;i<list.size();i++) {
                    if(list.get(i).getId() == user.getId()) {
                            list.remove(i);
                    }
            }
                            session.setAttribute("list",list);
         return "studentDashboard";
       } else if (user instanceof Teacher)
       {
            session.removeAttribute("list");
            ArrayList<User> list = userDao.getAll();
            for(int i=0;i<list.size();i++) {
                    if(list.get(i).getId() == user.getId()) {
                            list.remove(i);
                    }
            }
                            session.setAttribute("list",list);
         return "teacherDashboard";
       }

    }else
    {
       map.addAttribute("errorMessage", "Invalid username/password!");
       return "error";
    }
 }catch(Exception e)
 {
    e.printStackTrace();
 }
 return null;
```

```
   }

   @RequestMapping(value = "/user/validateemail.htm", method =
RequestMethod.GET)
   public String validateemail(HttpServletRequest request, UserDAO userDao,
ModelMap map){
      HttpSession session = request.getSession();
      String username = request.getParameter("username");
      int key1 = Integer.parseInt(request.getParameter("key1"));
      int key2 = Integer.parseInt(request.getParameter("key2"));

      if((Integer)(session.getAttribute("key1")) == key1 &&
(Integer)(session.getAttribute("key2")) == key2)
      {
         try{
            boolean updateStatus = userDao.updateUser(username);
                 if (updateStatus) {
               return "home";
                 } else {
               return "error";
                 }
         }catch(Exception e){
            e.printStackTrace();
         }
      }else{
         map.addAttribute("errorMessage", "Link expired , generate new link");
         map.addAttribute("resendLink", true);
         return "error";
      }
      return "home";
   }

   @RequestMapping(value = "/user/forgotpassword.htm", method =
RequestMethod.POST)
   public String handleForgotPasswordForm(HttpServletRequest request,
UserDAO userDao){
      String username = request.getParameter("username");
```

```
        Captcha captcha = Captcha.load(request, "CaptchaObject");
        String captchaCode = request.getParameter("captchaCode");
      User user = userDao.get(username);

      if (captcha.validate(captchaCode) && user != null) {
         sendEmail(username, "Your password is : " + user.getPassword());
         return "forgotPasswordSuccess";
        } else {
         request.setAttribute("captchamsg", "Captcha is not valid");
         return "forgotPassword";
        }
   }

   @RequestMapping(value = "/user/forgotpassword.htm", method =
RequestMethod.GET)
   public String getForgotPasswordForm() {
      return "forgotPassword";
   }
}
```

- **AccountController.java**

```
package com.mywork.finalproject.controller;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpSession;

import org.springframework.stereotype.Controller;
import org.springframework.ui.ModelMap;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.bind.annotation.ResponseBody;

import com.mywork.finalproject.dao.UserDAO;
import com.mywork.finalproject.pojo.Student;
import com.mywork.finalproject.pojo.Teacher;
import com.mywork.finalproject.pojo.User;
```

```
@Controller
public class AccountController {

	@RequestMapping(value = "/accountInfo/show.htm", method =
RequestMethod.GET)
	public String showAccountInfo(HttpServletRequest request, ModelMap
map){
		HttpSession session = request.getSession();
		User currentUser = (User)session.getAttribute("user");
		// prepare for showing different info in jsp page
		if(currentUser instanceof Student) {
			Student student = (Student) currentUser;
			map.addAttribute("student", student);
			return "studentInfo";
		}
		else if(currentUser instanceof Teacher) {
			Teacher teacher = (Teacher) currentUser;
			map.addAttribute("teacher", teacher);
			return "teacherInfo";
		}
		 return null;
	}


	@RequestMapping(value = "/accountInfo/changeInfo.htm", method =
RequestMethod.GET)
	public String changeAccount(HttpServletRequest request, ModelMap
map){
		HttpSession session = request.getSession();
		User currentUser = (User)session.getAttribute("user");
		// prepare for showing different info in jsp page
		if(currentUser instanceof Student) {
			Student student = (Student) currentUser;
			map.addAttribute("student", student);
		}
		else if(currentUser instanceof Teacher) {
				Teacher teacher = (Teacher) currentUser;
				map.addAttribute("teacher", teacher);
			}
			return "changeAccountInfo";
		}

		@RequestMapping(value = "/accountInfo/changeInfo.htm", method =
RequestMethod.POST)
		public String changeResult(HttpServletRequest request, UserDAO userDao,
ModelMap map)throws Exception{
			HttpSession session = request.getSession();
			User currentUser = (User)session.getAttribute("user");
			int accountId = currentUser.getId();

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

			if(currentUser instanceof Student) {
					String city = request.getParameter("city");
					String state = request.getParameter("state");
					String zipCode = request.getParameter("zipCode");
					userDao.updateStudent(accountId+"", name, age,
gender, city, state, zipCode);
				}
				else if(currentUser instanceof Teacher) {
					String subject = request.getParameter("subject");
					userDao.updateTeacher(accountId+"", name, age,
gender, subject);
				}
			return "changeInfoSuccess";
		}

		@RequestMapping(value = "/accountInfo/changePw.htm", method =
RequestMethod.GET)
		public String changePw(HttpServletRequest request, UserDAO userDao,
ModelMap map){
		return "changePassword";
	}

	@RequestMapping(value = "/accountInfo/changePw.htm", method = 
RequestMethod.POST)
	public String showNewPw(HttpServletRequest request, UserDAO userDao, 
ModelMap map)throws Exception{
		HttpSession session = request.getSession();
		User currentUser = (User)session.getAttribute("user");

		String oldPw = request.getParameter("oldPw");
		String newPw = request.getParameter("newPw");

		if(oldPw.equals(newPw)){
		map.addAttribute("errorMessage", "The two passwords must be not 
same");
		return "error";
	  }
	  else{
		if(currentUser.getPassword().equals(oldPw)){
		   userDao.updateUserPassword(currentUser.getId()+"", newPw);
		   return "changeInfoSuccess";
		}
		else {
			map.addAttribute("errorMessage", "The old password is 
wrong!");
		  return "error";
		}
	  }
	}
}
```

- **MessageController.java**

```
package com.mywork.finalproject.controller;

import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpSession;
import org.apache.commons.io.FileUtils;
import org.springframework.http.HttpHeaders;
import org.springframework.http.HttpStatus;
import org.springframework.http.MediaType;
import org.springframework.http.ResponseEntity;
import org.springframework.stereotype.Controller;
import org.springframework.ui.ModelMap;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestMethod;
import org.springframework.web.bind.annotation.RequestParam;
import org.springframework.web.multipart.MultipartFile;

import com.mywork.finalproject.dao.MessageDAO;
import com.mywork.finalproject.dao.UserDAO;
import com.mywork.finalproject.pojo.Message;
import com.mywork.finalproject.pojo.Student;
import com.mywork.finalproject.pojo.Teacher;
import com.mywork.finalproject.pojo.User;

import java.io.File;
import java.util.ArrayList;
import java.util.List;

@Controller
public class MessageController {

	@RequestMapping(value = "/messages.htm", method =
RequestMethod.GET)
	public String showMessagePage(HttpServletRequest request, MessageDAO
messageDao, UserDAO userDao, ModelMap map) {
		HttpSession session = request.getSession();
		User currentUser = (User) session.getAttribute("user");
		String action = request.getParameter("action");

		if (action.equals("inbox")) {
			String receiverUsername = currentUser.getUsername();
```

```
                        List<Message> messageList =
messageDao.getByReceiver(receiverUsername);
                        map.addAttribute("messageList", messageList);
                        return "messagesInbox";
                } else if (action.equals("compose")) {
                        map.addAttribute("sender", currentUser);
                        String reply = request.getParameter("reply");
                        if (reply == null) {
                                return "messagesCompose";
                        }else if (reply.equals("yes")) {
                                map.addAttribute("replySender", currentUser);
                                String subject = request.getParameter("subject");
                                map.addAttribute("receiver",
request.getParameter("replyReceiver"));
                                map.addAttribute("reply", "yes");
                                map.addAttribute("subject", subject);
                                return "messagesCompose";
                        }
                } else if (action.equals("reply")) {
                        return "messagesInbox";
                } else if(action.equals("delete")) {
                    int messageid =
Integer.parseInt(request.getParameter("messageid"));
                    messageDao.delete(messageid);
                    return "redirect:/messages.htm?action=inbox";
                }
                return null;
        }

        @RequestMapping(value = "/messages.htm", method =
RequestMethod.POST)
        public String handleMessagesRequests(@RequestParam("attachedfile")
MultipartFile file, HttpServletRequest request, UserDAO userDao, MessageDAO
messageDao, ModelMap map) throws Exception {
                String action = request.getParameter("action");

                if (action.equals("compose")) {
```

```
			HttpSession session = request.getSession();
			String receivername = request.getParameter("receiver");
			String subject = request.getParameter("subject");
			String content = request.getParameter("content");
			String replyFlag = request.getParameter("replyFlag");

			Message message = new Message();
			message.setSubject(subject);
			String username = "";
			if(userDao.getStudent(receivername) == null) {
				username = 
userDao.getTeacher(receivername).getUsername();
			}else {
				username = 
userDao.getStudent(receivername).getUsername();
			}
			User receiver = userDao.get(username);
			message.setReceiver(receiver.getUsername());
			User sender = (User) session.getAttribute("user");
			message.setSender(sender.getUsername());

			message.setContent(content);
			// 判断这个文件不为空
			if (!file.isEmpty()) {
				// 服务端的 images 目录需要手动创建好,上传到服务
器目录下
				// String path = 
session.getServletContext().getRealPath("/images");
				String path = "/Users/lx/Sites/INFO6250FinalProject";
				// 获取原始文件名
				String fileName = file.getOriginalFilename();
				// 截取文件的扩展名
				String extName = 
fileName.substring(fileName.lastIndexOf("."));
				File myFile = new File(path, fileName);
				// 完成文件上传
				file.transferTo(myFile);
```

```
					message.setAttachedfile(fileName);
				}
				messageDao.create(message);
				if (replyFlag == null) {
					return "redirect:/messages.htm?action=inbox";
				}
				if (replyFlag.equals("finished")) {
					String text = "You have successfully replied to " +
receiver.getUsername();
					map.addAttribute("content", text);
					return "success";
				}
			}
			return null;
	}

	@RequestMapping(value = "/message/downloadFile.htm", method =
RequestMethod.GET)
	public ResponseEntity<byte[]> downloadAssignment(HttpServletRequest
request, @RequestParam("filename") String filename, ModelMap model) throws
Exception {

			String path = "/Users/lx/Sites/INFO6250FinalProject";
			File file = new File(path + File.separator + filename);
			HttpHeaders headers = new HttpHeaders();
			// 下载显示的文件名，解决中文名称乱码问题
			String downloadFileName = new String(filename.getBytes("UTF-8"),
"iso-8859-1");
			// 通知浏览器以 attachment（下载方式）打开图片
			headers.setContentDispositionFormData("attachment",
downloadFileName);
			// application/octet-stream ： 二进制流数据（最常见的文件下
载）。
			headers.setContentType(MediaType.APPLICATION_OCTET_STREAM);
```

```
                return new
ResponseEntity<byte[]>(FileUtils.readFileToByteArray(file), headers,
HttpStatus.CREATED);
        }

}
```

- **DAO.java**

```
package com.mywork.finalproject.dao;

import java.util.logging.Level;
import java.util.logging.Logger;
import org.hibernate.HibernateException;
import org.hibernate.Session;
import org.hibernate.SessionFactory;
import org.hibernate.cfg.Configuration;

public class DAO {

        public DAO() {
   }

        static final Logger log = Logger.getAnonymousLogger();
   private final SessionFactory sf = new
Configuration().configure("hibernate.cfg.xml").buildSessionFactory();
   private Session session;

   public Session getSession() throws Exception
   {
      if(session == null || !session.isOpen())
      {
         session = sf.openSession();
      }
      return session;
   }

   public void begin() throws Exception
```

```
  {
     getSession().beginTransaction();
  }

  public void commit() throws Exception{
     getSession().getTransaction().commit();
  }

  public void rollback() throws Exception
  {
     try{
        getSession().getTransaction().rollback();
     }
     catch(HibernateException e){
        log.log(Level.WARNING, "Cannot rollback", e);
     }
  }

  public void close() throws Exception
  {
    getSession().close();
  }

}
```

- **UserDAO**

```
package com.mywork.finalproject.dao;

import java.util.ArrayList;
import java.util.List;
import org.hibernate.HibernateException;
import org.hibernate.Query;
import com.mywork.finalproject.pojo.Student;
import com.mywork.finalproject.pojo.Teacher;
import com.mywork.finalproject.pojo.User;

public class UserDAO extends DAO {
      public User register(User u) throws Exception
  {
     try{
        begin();
        getSession().save(u);
        commit();
        return u;
     }catch(HibernateException e){
        rollback();
       throw new Exception("Exception while creating user: " + e.getMessage());
     }
  }

  public User get(String username){
     try{
        begin();
        Query q = getSession().createQuery("from User where username
= :username");
        q.setString("username", username);
        User user = (User) q.uniqueResult();
        close();
        return user;
     }catch(Exception e){
        e.printStackTrace();
     }
     return null;
  }

  public Student getStudent(String name){
     try{
        begin();
        Query q = getSession().createQuery("from Student where name = :name");
        q.setString("name", name);
        Student student = (Student) q.uniqueResult();
        close();
        return student;
        }catch(Exception e){
            e.printStackTrace();
        }
        return null;
    }

    public Teacher getTeacher(String name){
        try{
            begin();
            Query q = getSession().createQuery("from User where name = :name");
            q.setString("name", name);
            Teacher teacher = (Teacher) q.uniqueResult();
            close();
            return teacher;
        }catch(Exception e){
            e.printStackTrace();
        }
        return null;
    }

    public ArrayList<User> getAll(){
        try{
            begin();
            Query q = getSession().createQuery("from User");
            ArrayList<User> list = (ArrayList)q.list();
            close();
            return list;
        }catch(Exception e){
            e.printStackTrace();
        }
        return null;
    }

    public ArrayList<Teacher> getAllTeacher(){
        try{
            begin();
            Query q = getSession().createQuery("from Teacher");
            ArrayList<Teacher> list = (ArrayList)q.list();
            close();
            return list;
        }catch(Exception e){
            e.printStackTrace();
        }
        return null;
    }

    public ArrayList<Student> getAllStudent(){
        try{
            begin();
            Query q = getSession().createQuery("from Student");
            ArrayList<Student> list = (ArrayList)q.list();
            close();
            return list;
        }catch(Exception e){
            e.printStackTrace();
        }
        return null;
    }

    public User get(String username,String password)
    {
        try {
            begin();
            Query q = getSession().createQuery("from User where username
= :username and password = :password");
            q.setString("username", username);
            q.setString("password", password);
            User user = (User) q.uniqueResult();
            if(user == null){

            }else{
                close();
                return user;
            }
        }catch(Exception e){
            System.out.println(e.getMessage());
        }
            return null;
    }

    public boolean updateUser(String username) throws Exception {
        try{
            begin();
            Query q = getSession().createQuery("from User where username
= :username");
            q.setString("username", username);
            User user = (User)q.uniqueResult();
            if(user != null){
                user.setStatus(1);
                getSession().update(user);
                commit();
                return true;
            }else{
                return false;
            }
        }catch(HibernateException e){
            rollback();
            throw new Exception("Exception while creating user: " + e.getMessage());
        }
    }

    public boolean updateStudent(String id, String name, String age, String gender,
                            String city, String state, String zipCode) throws Exception {
        try {
            begin();
            Query q = getSession().createQuery("from Student where id = :id");
            q.setString("id", id);
            Student student = (Student)q.uniqueResult();
            if(student != null){
                student.setName(name);
                student.setAge(Integer.parseInt(age));
                student.setGender(gender);
                student.setCity(city);
                student.setState(state);
                student.setZipCode(zipCode);
                getSession().update(student);
                commit();
                close();
                return true;
            }else{
                return false;
            }
        }catch(HibernateException e){
            rollback();
            throw new Exception("Exception while creating user: " + e.getMessage());
        }
    }

    public boolean updateTeacher(String id, String name, String age, String gender,
String subject)throws Exception{
        try{
            begin();
            Query q = getSession().createQuery("from Teacher where id = :id");
            q.setString("id", id);
            Teacher teacher = (Teacher)q.uniqueResult();
            if(teacher != null){
                teacher.setName(name);
                teacher.setAge(Integer.parseInt(age));
                teacher.setGender(gender);
                teacher.setSubject(subject);
                getSession().update(teacher);
                commit();
                close();
                return true;
            }else{
                return false;
            }
        }catch(HibernateException e){
            rollback();
            throw new Exception("Exception while creating user: " + e.getMessage());
        }
    }

    public boolean updateUserPassword(String id, String password) throws
Exception{
        try{
            begin();
            Query q = getSession().createQuery("from User where id = :id");
            q.setString("id", id);
            User user = (User) q.uniqueResult();
            if(user != null){
                user.setPassword(password);
                getSession().update(user);
                commit();
                return true;
            }else{
                return false;
            }
        }catch(HibernateException e){
            rollback();
            throw new Exception("Exception while creating user: " + e.getMessage());
        }
    }

    public Student addInfo(Student student) throws Exception{
        try {
            begin();
            getSession().save(student);
            commit();
            return student;

        } catch (HibernateException e) {
            rollback();
            throw new Exception("Exception : " + e.getMessage());
        }
    }
}
```

- **MessageDAO.java**

```
package com.mywork.finalproject.dao;

import java.util.List;

import org.hibernate.HibernateException;
import org.hibernate.query.Query;

import com.mywork.finalproject.pojo.Message;

public class MessageDAO extends DAO{

	public List<Message> getByReceiver(String receiverUsername) {
		try {
			begin();
			Query q = getSession().createQuery("from Message where
receiver = :receiver");
			q.setString("receiver", receiverUsername);
			List<Message> messages = q.list();
			close();
			return messages;
		} catch (Exception e) {
			System.out.println(e.getMessage());
		}
		return null;
	}

	public Message create(Message message) throws Exception{
		try {
			begin();
			System.out.println("inside DAO");
			getSession().save(message);
			commit();
```

```
                        return message;
                }catch(HibernateException e) {
                        rollback();
                        throw new Exception("Exception while creating message: " +
e.getMessage());
                }
        }

        public boolean update(String id,String subject,String attachedfile,String
content) throws Exception{
                try {
                        begin();
                        System.out.println("inside DAO");
                        Query q = getSession().createQuery("from Message where
messageid = : id");
                        q.setString("id", id);
                        Message message = (Message)q.uniqueResult();
                        if(message != null) {
                                message.setSubject(subject);
                                message.setAttachedfile(attachedfile);
                                message.setContent(content);
                                getSession().update(message);
                                commit();
                                return true;
                        }else {
                                return false;
                        }
                }catch(HibernateException e) {
                        rollback();
                        throw new Exception("Exception while editing appointment :"
+ e.getMessage());
                }
        }

        public boolean delete(int messageid) {
                try {
                        begin();
```

```
			Query q = getSession().createQuery("delete from Message 
where messageid = :messageid");
			q.setInteger("messageid", messageid);
			q.executeUpdate();
			close();
			return true;
		} catch (Exception e) {
			System.out.println(e.getMessage());
		}
		return false;
	}
}
```

- **User.java**

```
package com.mywork.finalproject.pojo;

import javax.persistence.Column;
import javax.persistence.Entity;
import javax.persistence.GeneratedValue;
import javax.persistence.GenerationType;
import javax.persistence.Id;
import javax.persistence.Inheritance;
import javax.persistence.InheritanceType;
import javax.persistence.Table;

@Entity
@Table(name = "user_table")
@Inheritance(strategy = InheritanceType.JOINED)
public class User {

    public User() {
    }

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    @Column(name = "id", unique = true, nullable = false)
```

```
private int id;

@Column(name = "username")
private String username;

@Column(name = "password")
private String password;

@Column(name = "status")
private int status;


public int getId() {
   return id;
}

public void setId(int id) {
   this.id = id;
}

public String getUsername() {
   return username;
}

public void setUsername(String username) {
   this.username = username;
}

public String getPassword() {
   return password;
}

public void setPassword(String password) {
   this.password = password;
}

public int getStatus() {
        return status;
    }

    public void setStatus(int status) {
        this.status = status;
    }

}
```

- **Student.java**

```
package com.mywork.finalproject.pojo;

import javax.persistence.Column;
import javax.persistence.Entity;

@Entity
public class Student extends User{

            public Student() {
        super();
    }

    @Column(name="name")
    private String name;

    @Column(name="age")
    private int age;

    @Column(name="gender")
    private String gender;

    @Column(name="city")
    private String city;

    @Column(name="state")
    private String state;
```

```
@Column(name="zipCode")
private String zipCode;

public String getName() {
   return name;
}

public void setName(String name) {
   this.name = name;
}

public int getAge() {
   return age;
}

public void setAge(int age) {
   this.age = age;
}

public String getGender() {
   return gender;
}

public void setGender(String gender) {
   this.gender = gender;
}

public String getCity() {
   return city;
}

public void setCity(String city) {
   this.city = city;
}

public String getState() {
   return state;
```

```
    }

    public void setState(String state) {
        this.state = state;
    }

    public String getZipCode() {
        return zipCode;
    }

    public void setZipCode(String zipCode) {
        this.zipCode = zipCode;
    }
}
```

- **Teacher.java**

```
package com.mywork.finalproject.pojo;

import javax.persistence.Column;
import javax.persistence.Entity;

@Entity
public class Teacher extends User{

        public Teacher() {
        super();
    }

    @Column(name="name")
    private String name;

    @Column(name="age")
    private int age;

    @Column(name="gender")
    private String gender;
    @Column(name="subject")
    private String subject;

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }

    public int getAge() {
        return age;
    }

    public void setAge(int age) {
        this.age = age;
    }

    public String getGender() {
        return gender;
    }

    public void setGender(String gender) {
        this.gender = gender;
    }

    public String getSubject() {
        return subject;
    }

    public void setSubject(String subject) {
        this.subject = subject;
    }
}
```

- **Message.java**

```
package com.mywork.finalproject.pojo;

import javax.persistence.CascadeType;
import javax.persistence.Column;
import javax.persistence.Entity;
import javax.persistence.GeneratedValue;
import javax.persistence.GenerationType;
import javax.persistence.Id;
import javax.persistence.JoinColumn;
import javax.persistence.ManyToOne;
import javax.persistence.Table;
import javax.persistence.FetchType;


@Entity
@Table(name = "Message")
public class Message {

        public Message() {
    }

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    @Column(name="messageid", unique = true, nullable = false)
    private int messageid;


    @Column(name = "sender")
    private String sender;


    @Column(name = "receiver")
    private String receiver;

    @Column(name="subject")
    private String subject;
```

```
@Column(name="content")
private String content;

@Column(name="attachedfile")
	private String attachedfile;

public int getMessageid() {
		return messageid;
	}

	public void setMessageid(int messageid) {
		this.messageid = messageid;
	}

	public String getSender() {
		return sender;
	}

	public void setSender(String sender) {
		this.sender = sender;
	}

	public String getReceiver() {
		return receiver;
	}

	public void setReceiver(String receiver) {
		this.receiver = receiver;
	}

	public String getSubject() {
   return subject;
}

public void setSubject(String subject) {
   this.subject = subject;
}
```

```
    public String getContent() {
        return content;
    }

    public void setContent(String content) {
        this.content = content;
    }

    public String getAttachedfile() {
                return attachedfile;
        }

        public void setAttachedfile(String attachedfile) {
                this.attachedfile = attachedfile;
        }

}
```