文件上传下载　Java EE框架 ---Struts2 Mybatis

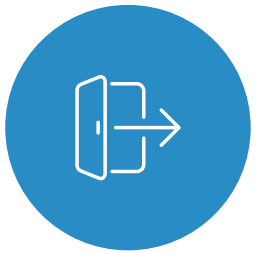
Struts2 Mybatis实现文件上传下载

王磊　　计算机工程学院

CONTENTS

Struts2

Mybatis逆向工程

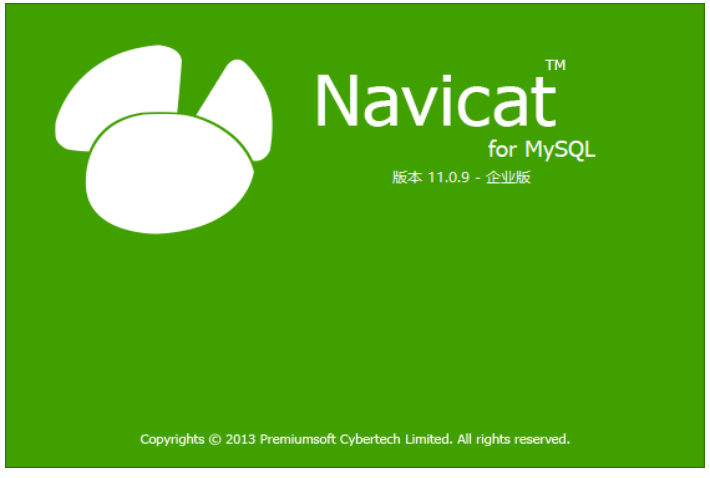


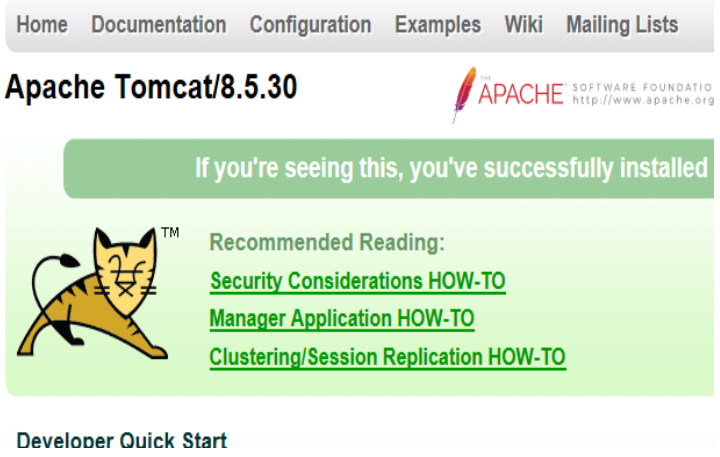
MybatisUtil

项目测试

开发环境设置

1、操作系统：Windows7、Windows10
2、应用软件：Jdk1.8.0_162 Eclipse Oxygen Release Milestone 5 (4.7.0 M5) 、
MySQL5.5、Navicat for MySQL11.0
3、服务器：Tomcat8.5.30





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需求：用Struts2和Mybatis实现文件上传下载

1、使用mysql创建uploadfile数据库，创建uplod表
cmd：mysql –uroot –p
show databases;
create database uploadfile;

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| blogdb             |
| many2one           |
| mysql              |
| test               |
| user_manager       |
| userdb             |
| usermanager        |
+--------------------+
8 rows in set (0.00 sec)
```

```
mysql> create database uploadfile;
Query OK, 1 row affected (0.00 sec)

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| blogdb             |
| many2one           |
| mysql              |
| test               |
| uploadfile         |
| user_manager       |
| userdb             |
| usermanager        |
+--------------------+
9 rows in set (0.00 sec)
```

```
mysql> use uploadfile;
Database changed
mysql> create table if not exists `upfile`(
    -> `id` int auto_increment,
    -> `uploadfilename` varchar(100),
    -> `newfilename` varchar(100),
    -> `url` varchar(100),
    -> primary key (`id`)
    -> )engine=InnoDB default charset=utf8;
Query OK, 0 rows affected (0.00 sec)

mysql> show tables;
+-----------------------+
| Tables_in_uploadfile  |
+-----------------------+
| upfile                |
+-----------------------+
1 row in set (0.00 sec)
```

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1、使用mysql创建uploadfile数据库，创建uplod表

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show databases;

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`uploadfilename` varchar(100),

`newfilename` varchar(100),

`url` varchar(100),

primary key (`id`)

)engine=InnoDB default charset=utf8;

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Database changed
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    -> `id` int auto_increment,
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    -> `url` varchar(100),
    -> primary key (`id`)
    -> )engine=InnoDB default charset=utf8;
Query OK, 0 rows affected (0.00 sec)

mysql> show tables;
+-----------------------+
| Tables_in_uploadfile  |
+-----------------------+
| upfile                |
+-----------------------+
1 row in set (0.00 sec)
```

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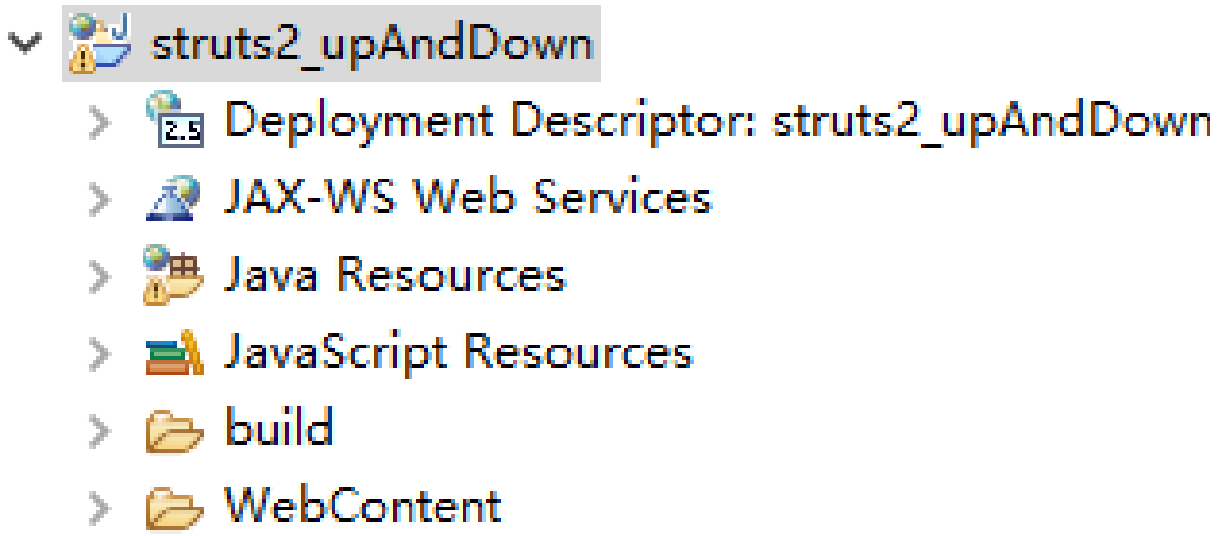
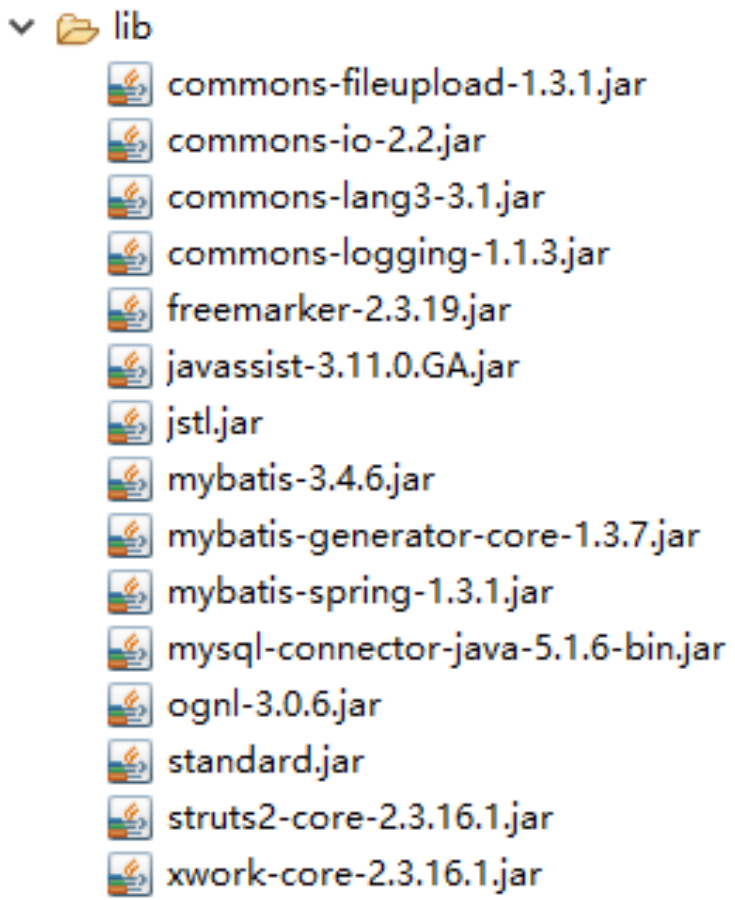
需求：用Struts2和Mybatis实现文件上传下载

2、创建Java动态工程项目
2.1 引入jar包





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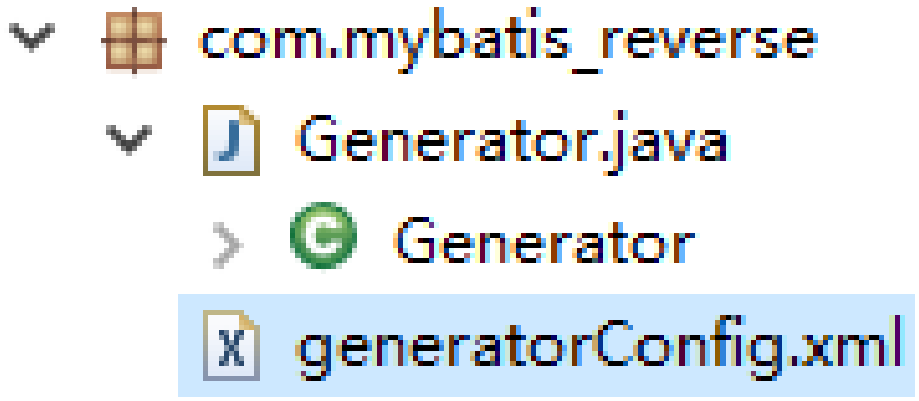
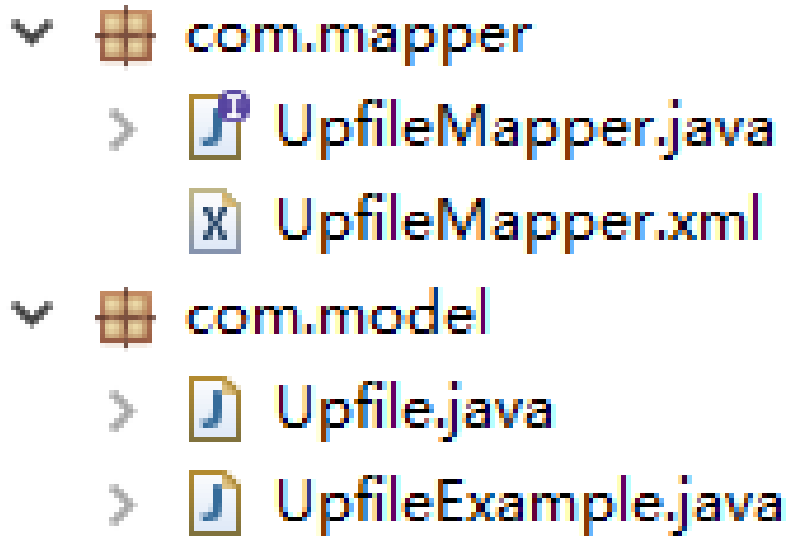
需求：用Struts2和Mybatis实现文件上传下载

2、创建Java动态工程项目
2.1 引入jar包
2.2 创建mybatis逆向工程，自动生成mapper接口和model类
(1) 创建generatorConfig.xml配置文件
(2) 创建Generator.java，进行逆向工程





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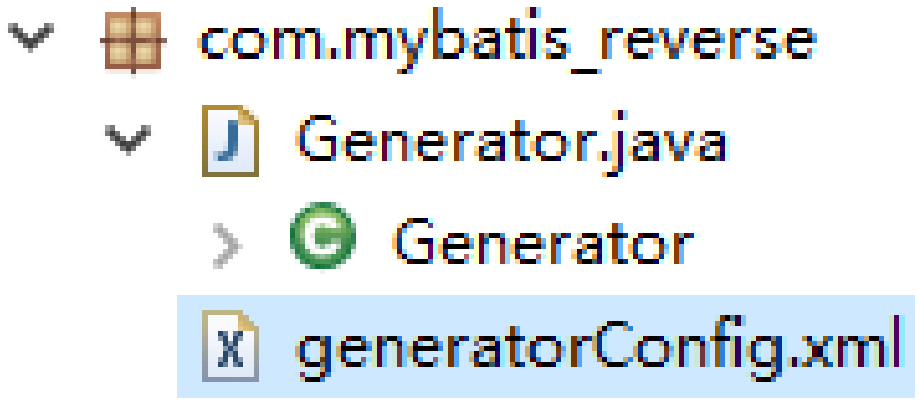
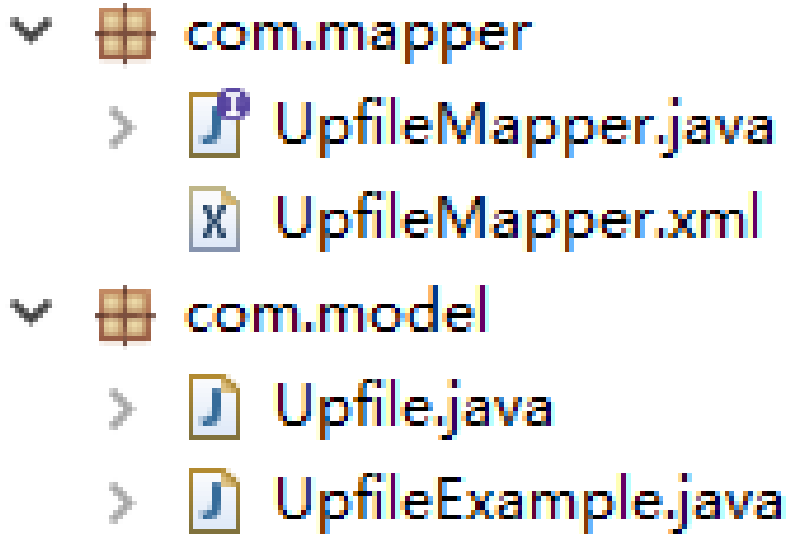
需求：用Struts2和Mybatis实现文件上传下载

2、创建Java动态工程项目
2.1 引入jar包
2.2 创建mybatis逆向工程，自动生成mapper接口和model类





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2、创建Java动态工程项目
2.3 创建mybatisUtil工具类

```
package com.util;
import java.io.IOException;
import java.io.InputStream;
import org.apache.ibatis.io.Resources;
import org.apache.ibatis.session.SqlSession;
import org.apache.ibatis.session.SqlSessionFactory;
import org.apache.ibatis.session.SqlSessionFactoryBuilder;
public class MyBatisUtil {
public static SqlSessionFactory getSqlSessionFactory() throws IOException {
String resource = "SqlMapConfig.xml";
InputStream in = Resources.getResourceAsStream(resource);
SqlSessionFactory sqlSessionFactory = new SqlSessionFactoryBuilder().build(in);
return sqlSessionFactory;}
public static SqlSession getSqlSession(boolean autoCommit) throws IOException
{  return getSqlSessionFactory().openSession(autoCommit);}
      public static SqlSession getSqlSession() throws IOException {
            return getSqlSessionFactory().openSession();}
}
```

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SqlMapConfig.xml配置文件

```
<configuration>
    <environments default="struts2_upAndDown">
    <environment id="struts2_upAndDown">
    <!-- 使用jdbc事务管理 -->
    <transactionManager type="JDBC"/>
    <!-- 数据库链接池 -->
    <dataSource type="POOLED">
    <property name="driver" value="com.mysql.jdbc.Driver"/>
    <property name="url" value="jdbc:mysql://localhost:3306/
                                uploadfile?characterEncoding=utf-8"/>
    <property name="username" value="root"/>
    <property name="password" value="root"/>
    </dataSource>
    </environment>
    </environments>
    <mappers>
       <mapper resource="com/mapper/UpfileMapper.xml"/>
    </mappers>
 </configuration>
```

mybatis环境配置可以有多种，包括mysql Oracle mariadb 等，这里必须指定default的内容为配置好的id之一。

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2、创建Java动态工程项目
2.4 创建com.dao包，创建FileDao.java类


```
import com.mapper.UpfileMapper;
import com.model.Upfile;
import com.model.UpfileExample;
import com.util.MyBatisUtil;
public class FileDao {
public void insert(Upfile upfile) throws IOException{
  SqlSession sqlSession = MyBatisUtil.getSqlSession(true);
  UpfileMapper mapper = sqlSession.getMapper(UpfileMapper.class);
  mapper.insert(upfile);
}
public List<Upfile> getAllFileList() throws IOException {
  SqlSession sqlSession = MyBatisUtil.getSqlSession(true);
  UpfileMapper mapper = sqlSession.getMapper(UpfileMapper.class);
  UpfileExample example = new UpfileExample();
  List<Upfile> allList = mapper.selectByExample(example);
  return allList;}
}
```

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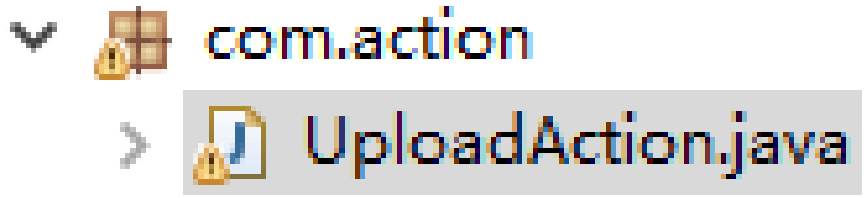
2、创建Java动态工程项目
2.5 创建com.action包，创建UploadAction.java类




```
package com.action;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;
import java.io.IOException;
import org.apache.commons.io.IOUtils;
import com.dao.FileDao;
import com.model.Upfile;
import com.opensymphony.xwork2.ActionContext;
import com.opensymphony.xwork2.ActionSupport;
```

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2.5 创建com.action包，创建UploadAction.java类

```
public class UploadAction extends ActionSupport {
//上传文件全路径、类型、文件名
    private File upload;
    private String uploadContentType;
    private String uploadFileName;
    //新文件保存路径和名称
    private String savePath;
    省略set和get方法
```

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2.5 创建com.action包，创建UploadAction.java类

```
public String doUpload() throws IOException{
        System.out.println(upload);
        System.out.println(uploadContentType);
        System.out.println(uploadFileName);
        String newFileName=System.currentTimeMillis()+
           uploadFileName.substring(uploadFileName.lastIndexOf("."));
        System.out.println("新的文件名:"+newFileName);
        //获取上传路径
        savePath="d:/upload/"+ newFileName;
        System.out.println("上传保存的路径和名称:"+savePath);
        //使用文件输入、输出流写入文件
        FileInputStream  fis=new FileInputStream(upload);
        FileOutputStream fos=new FileOutputStream(savePath);
```

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2.5 创建com.action包，创建UploadAction.java类

```
            //复制文件
            IOUtils.copy(fis, fos);
            //写入数据库
            Upfile upfile = new Upfile();
            upfile.setUploadfilename(uploadFileName);
            upfile.setNewfilename(newFileName);
            upfile.setUrl(savePath);
            FileDao fileDao = new FileDao();
            fileDao.insert(upfile);
            fos.flush();
            fos.close();
            fis.close();
            //从数据库中读取所有文件，置入actionContext
            ActionContext ac = ActionContext.getContext();
            ac.put("allList", fileDao.getAllFileList());
            return SUCCESS;
    }
}
```

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2.6 创建DownloadAction.java类

```
package com.action;
import java.io.File;
…
public class DownloadAction extends ActionSupport {
private String name;
public String getName() {
        return name;
}
public void setName(String name) {
        this.name = name;
}
public InputStream getInputStream() throws FileNotFoundException {
        String realpath = "d:/upload/";
        String filePath =realpath + name;
        InputStream is = new FileInputStream(new File(filePath));
        return is;
        }
}
```

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2.7 创建GoUploadAction类

```
package com.action;
import java.io.IOException;
import com.dao.FileDao;
import com.opensymphony.xwork2.ActionContext;
import com.opensymphony.xwork2.ActionSupport;
public class GoUploadAction extends ActionSupport {
public String execute() throws IOException {
        FileDao fileDao = new FileDao();
        ActionContext ac = ActionContext.getContext();
        ac.put("allList", fileDao.getAllFileList());
        return SUCCESS;
        }
}
```

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3、配置struts.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
    <!DOCTYPE struts PUBLIC
"-//Apache Software Foundation//DTD Struts Configuration 2.3//EN"
"http://struts.apache.org/dtds/struts-2.3.dtd">
```

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3、配置struts.xml

```
<struts>
<!-- 开启debug模式，自动加载配置文件，每次更改配置文件会自动重启服务器 -->
<constant name="struts.devMode" value="true" />
<constant name="struts.multipart.saveDir" value="/tmp"/>
<package name="default" namespace="/" extends="struts-default">
<action name="doUpload" class="com.action.UploadAction"method="doUpload">
       <interceptor-ref name="fileUpload">
            <!-- 2的30次幂是1073741824  1G大小-->
            <param name="maximumSize">1073741824</param>
           <!-- <param name="allowedTypes">image/bmp,image/png,image/gif,
            image/pjpeg,image/jpg,application/msword,
            application/vnd.ms-excel,application/octet-stream,text/plain,
            application/vnd.ms-powerpoint,application/x-ppt</param> -->
        </interceptor-ref>
        <interceptor-ref name="defaultStack"></interceptor-ref>
        <result name="success">/success.jsp</result>
        <result name="error">/error.jsp</result>
</action>
```

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配置struts.xml

```
<action name="downloadAction" class="com.action.DownloadAction">
        <result type="stream">
        <!-- 下载文件数据存放的方法，该方法返回一个InputStream
        例如取值inputStream的属性需要编写getInputStream()方法
        -->
        <param name="inputStream">inputStream</param>
        <!-- 下载时客户端显示的下载文件名 -->
        <param name="contentDisposition">attachment;filename=${name}</param>
        <!-- 数据缓冲大小 -->
        <param name="buffersize">2048</param>
        </result>
</action>
<action name="goUploadAction" class="com.action.GoUploadAction">
        <result name="success">/success.jsp</result>
</action>
</package>
</struts>
```

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4、编写index.jsp页面

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>文件上传下载</title>
</head>
<body>
        <center>
                <h2>使用Struts2实现文件上传下载</h2>
        <ul>
                <li><a href="upload.jsp">上传文件</a></li>
                <li><a href="goUploadAction">下载页面</a></li>
        </ul>
</center>
</body>
</html>
```

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5、编写upload.jsp页面

```
<%@ page language="java" contentType="text/html; charset=UTF-8"
pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>Insert title here</title>
</head>
<body>
	<form action="doUpload.action" method="post" enctype="multipart/form-data">
		<input type="file" name="upload"/>
		<input type="submit" value="上传">
	</form>
</body>
</html>
```

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6、编写success.jsp页面

```
<%@ page language="java" contentType="text/html; charset=UTF-8" pageEncoding="UTF-8"%>
<%@ taglib prefix="s" uri="/struts-tags"%>
<%@ taglib uri="http://java.sun.com/jsp/jstl/core" prefix="c" %>
<!DOCTYPE html>
<html>
<head>
<meta charset="UTF-8">
<title>文件上传下载</title>
</head>
<body>
<h1>上传成功</h1>
<table border="1" >
<tr><th>编号</th><th>文件名</th><th>操作</th></tr>
<c:forEach items="${allList}" var="file">
    <tr>
        <td>${file.id}</td>
        <td>${file.uploadfilename}</td>
        <td<a href="downloadAction?name=${file.newfilename}">下载</a></td>
    </tr>
</c:forEach>
</table>
</body>
</html>
```

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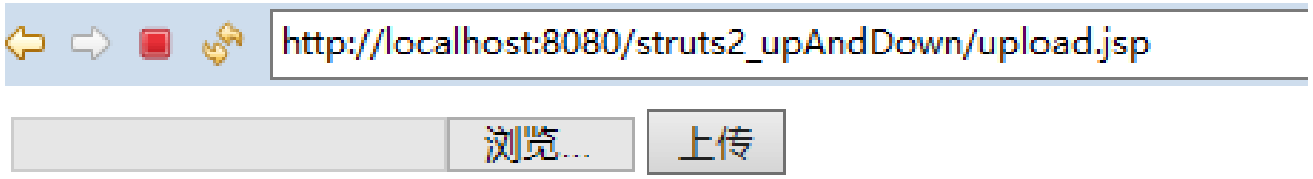
7、测试项目
(1) 启动服务器
(2) 在url地址栏输入：http://localhost:8080/struts2_upAndDown/index.jsp

使用Struts2实现文件上传下载

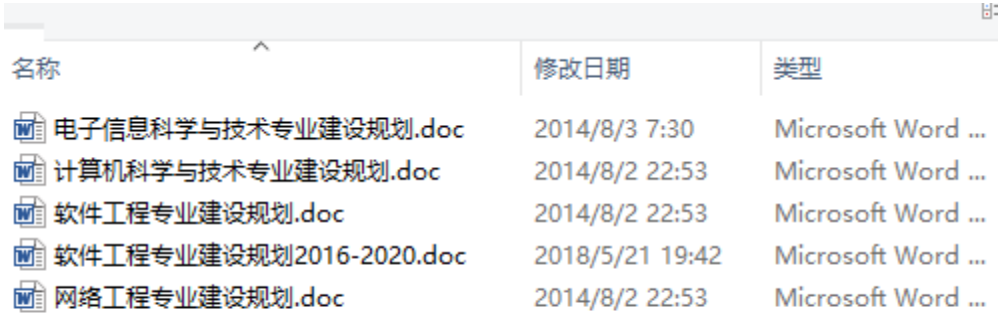
上传文件
下载页面

文件上传下载

(3) 点击上传文件



(4) 点击浏览



(5) 选择要上传的文件，点击上传

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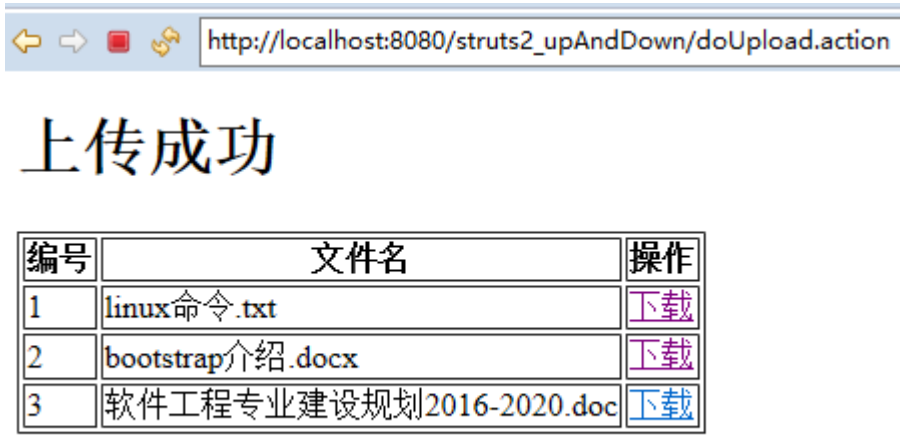
(6) 点击上传文件



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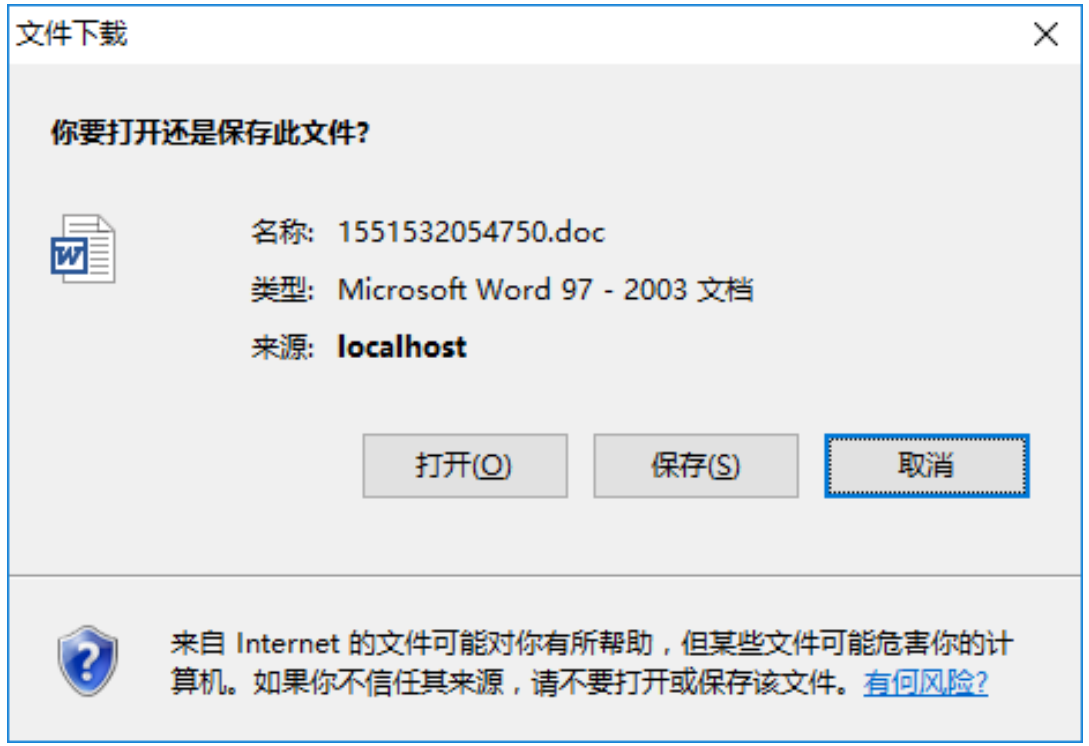
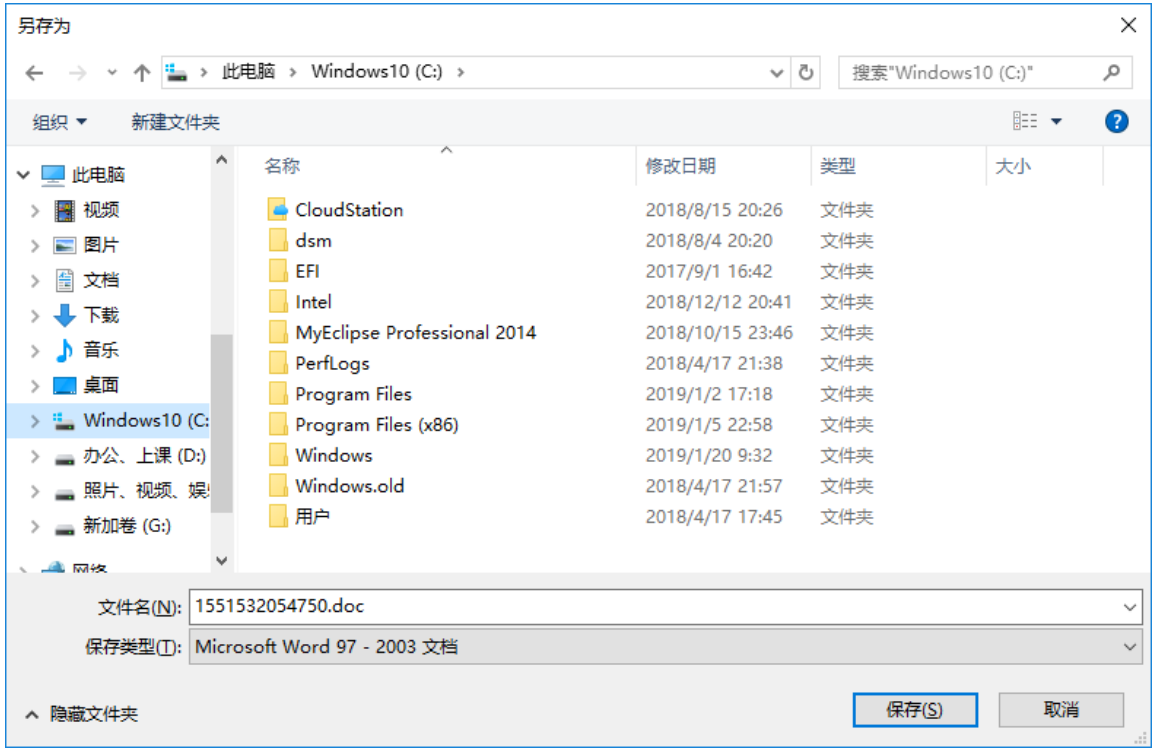
(7) 点击下载





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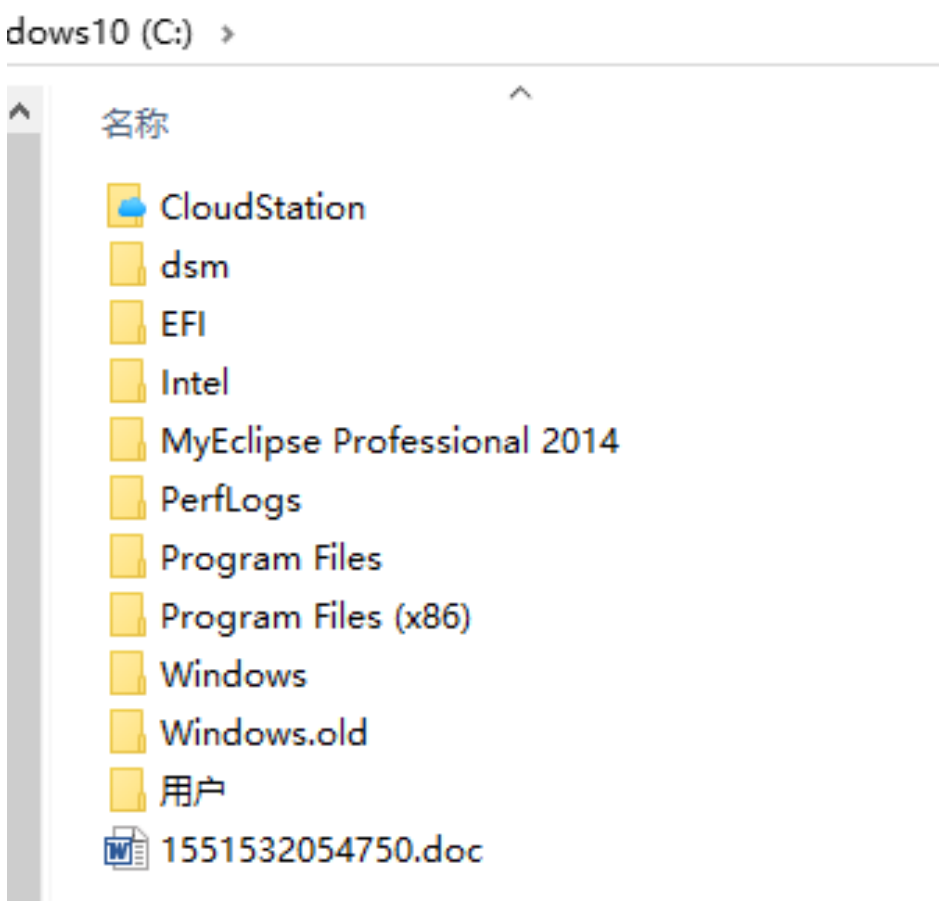
(7) 切换到目标地址，发现下载成功



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(8) cmd 进入MySQL数据库，查看数据

```
mysql> select * from upfile;
+----+-------------------------------------+-------------------+-------------------------------------+
| id | uploadfilename                      | newfilename       | url                                 |
+----+-------------------------------------+-------------------+-------------------------------------+
|  1 | linux命令.txt                       | 1551530629687.txt | d:/upload/1551530629687.txt         |
|  2 | bootstrap介绍.docx                  | 1551530638513.docx | d:/upload/1551530638513.docx        |
|  3 | 软件工程专业建设规划2016-2020.doc   | 1551532054750.doc | d:/upload/1551532054750.doc         |
+----+-------------------------------------+-------------------+-------------------------------------+
3 rows in set (0.00 sec)
```

作业

1、在Windows实体机或者虚拟机中配置开发环境。

2、理解Struts2架构体系。

3、编写本课程介绍的上传下载项目。用firefox浏览器调试程序，记录并调试过程中出现的问题。

4、项目陈述。