# 1、环境

- IDEA
- MySql 5.5.29
- Tomcat 8.5.28
- Maven 3.5.4

# 2、数据库环境

创建一个存放书籍的数据库表

```
1 create database ssmbuild;
 3 use ssmbuild;
 5 drop table if exists books;
 7
   create table books(
8 | bookID int(10) primary key auto_increment comment '书id',
9 bookName varchar(100) not null comment '书名',
10 bookCounts int(11) not null comment '数量',
11 detail varchar(200) not null comment '描述'
12
   )engine=innodb default charset=utf8;
13
14 insert into books(bookID,bookName,bookCounts,detail) values
15 (1,'Java',10,'从入门到放弃'),
16 (2,'MySQL',5,'从删库到跑咯'),
17
   (3,'linux',3,'从入门到进牢');
18
19 | select * from books;
```

# 3、基本环境搭建

1. 新建一Maven-web项目! ssmbuild 创建java文件夹标记为源, resources标记为Resources根

```
For idea

Project ▼

Ssmbuild E:\ideaProject\ssmbuild

I idea

I ide
```

### 2. 导入相关的pom依赖!

```
<!--依赖: junit,数据库驱动,连接池,servlet,jsp,mybatis,mybatis-
    spring,spring-->
 2
    <dependencies>
 3
     <!--Junit-->
     <dependency>
 4
       <groupId>junit
       <artifactId>junit</artifactId>
 6
 7
       <version>4.12
 8
      </dependency>
9
      <!--数据库驱动-->
10
      <dependency>
11
       <groupId>mysql</groupId>
12
       <artifactId>mysql-connector-java</artifactId>
       <version>5.1.47
13
14
      </dependency>
15
      <!-- 数据库连接池 c3p0 -->
16
      <dependency>
       <groupId>com.mchange
17
       <artifactId>c3p0</artifactId>
18
19
       <version>0.9.5.2
20
      </dependency>
21
      <!--Servlet - JSP -->
22
      <dependency>
23
24
       <groupId>javax.servlet
25
       <artifactId>servlet-api</artifactId>
       <version>2.5</version>
26
      </dependency>
27
      <dependency>
28
29
       <groupId>javax.servlet.jsp</groupId>
30
       <artifactId>jsp-api</artifactId>
31
       <version>2.2</version>
32
      </dependency>
      <dependency>
33
```

```
34
       <groupId>javax.servlet
35
       <artifactId>jstl</artifactId>
36
        <version>1.2</version>
      </dependency>
37
38
39
      <!--Mybatis-->
40
      <dependency>
       <groupId>org.mybatis
41
42
       <artifactId>mybatis</artifactId>
43
        <version>3.5.2</version>
      </dependency>
44
45
      <dependency>
46
       <groupId>org.mybatis
47
       <artifactId>mybatis-spring</artifactId>
        <version>2.0.2
48
      </dependency>
49
50
51
      <!--Spring-->
52
      <dependency>
53
       <groupId>org.springframework</groupId>
54
       <artifactId>spring-webmvc</artifactId>
55
       <version>5.1.9.RELEASE
56
      </dependency>
57
      <dependency>
58
       <groupId>org.springframework
       <artifactId>spring-jdbc</artifactId>
59
60
       <version>5.1.9.RELEASE
61
      </dependency>
      <!--lombok-->
62
63
      <dependency>
          <groupId>org.projectlombok</groupId>
64
65
          <artifactId>lombok</artifactId>
          <version>1.18.8
66
      </dependency>
67
68
      <!--aop织入-->
      <dependency>
69
70
       <groupId>org.aspectj</groupId>
71
       <artifactId>aspectjweaver</artifactId>
72
       <version>1.9.4
73
      </dependency>
74
    </dependencies>
```

### 3. Maven资源过滤设置

```
1
    <build>
 2
        <resources>
 3
             <resource>
 4
                 <directory>src/main/java</directory>
 5
                 <includes>
                     <include>**/*.properties</include>
 6
 7
                     <include>**/*.xml</include>
 8
                 </includes>
 9
                 <filtering>false</filtering>
10
             </resource>
11
             <resource>
12
                 <directory>src/main/resources</directory>
13
                 <includes>
```

### 4. 建立基本结构和配置框架!

- o com.zh.pojo
- o com.zh.mapper
- o com.zh.service
- o com.zh.controller
- o mybatis-config.xml

applicationContext.xml

# 4、Mybatis层

1. 数据库配置文件 database.properties

```
jdbc.driver=com.mysql.jdbc.Driver
jdbc.url=jdbc:mysql://localhost:3306/ssmbuild?
useSSL=true&useUnicode=true&characterEncoding=utf8
jdbc.username=root
jdbc.password=123456
```

- 2. IDEA关联数据库
- 3. 编写MyBatis的核心配置文件mybatis-config.xml

注意:这里的配置也可以配置在applicationContext.xml中

```
1 <?xml version="1.0" encoding="UTF-8" ?>
```

```
<!DOCTYPE configuration
2
3
            PUBLIC "-//mybatis.org//DTD Config 3.0//EN"
            "http://mybatis.org/dtd/mybatis-3-config.dtd">
4
   <configuration>
 5
 6
7
        <!--配置数据源,交给spring-->
8
9
        <settings>
10
            <setting name="logImpl" value="STDOUT_LOGGING"/>
11
       </settings>
12
13
       <typeAliases>
14
            <package name="com.zh.pojo"/>
15
        </typeAliases>
16
17
        <mappers>
18
            <mapper class="com.zh.mapper.BookMapper"/>
19
        </mappers>
20
21
   </configuration>
```

4. 编写数据库对应的实体类 com.kuang.pojo.Books 使用lombok插件!

```
package com.zh.pojo;
1
 2
 3 import lombok.AllArgsConstructor;
   import lombok.Data;
 5
   import lombok.NoArgsConstructor;
 6
 7
    @Data
8 @AllArgsConstructor
9
   @NoArgsConstructor
10 public class Books {
11
12
        private int bookID;
13
        private String bookName;
14
        private int bookCounts;
        private String detail;
15
16
17 }
```

5. 编写Dao层的 Mapper接口!

```
package com.zh.mapper;
1
 2
    import com.zh.pojo.Books;
 3
    import org.apache.ibatis.annotations.Param;
 4
 5
 6
    import java.util.List;
 7
    public interface BookMapper {
 8
9
        //增加一本书
10
11
        int addBook(Books books);
12
```

```
13
        //删除
14
        int deleteBookById(@Param("id") int id);
15
16
        //修改
17
        int updateBook(Books books);
18
19
        //查询
        Books findById(@Param("id") int id);
20
21
22
        List<Books> findAll();
23
24 }
```

6. 编写接口对应的 Mapper.xml 文件。需要导入MyBatis的包;

```
<?xml version="1.0" encoding="UTF-8" ?>
 2
    <!DOCTYPE mapper
 3
            PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
 4
            "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
 5
 6
    <mapper namespace="com.zh.mapper.BookMapper">
 7
 8
        <insert id="addBook" parameterType="books">
9
            insert into ssmbuild.books (bookName, bookCounts, detail)
            values (#{bookName}, #{bookCounts}, #{detail});
10
11
        </insert>
12
13
        <delete id="deleteBookById" parameterType="int">
            delete from ssmbuild.books where bookID = #{id}
14
        </delete>
15
16
        <update id="updateBook" parameterType="books">
17
            update ssmbuild.books set bookName = #{bookName},
18
            bookCounts = #{bookCounts}, detail = #{detail}
19
20
            where bookID = #{bookID};
21
        </update>
22
        <select id="findById" parameterType="int" resultType="books">
23
            select * from ssmbuild.books where bookID = #{id};
24
25
        </select>
26
27
        <select id="findAll" resultType="books">
            select * from ssmbuild.books;
28
29
        </select>
30
    </mapper>
```

### 7. 实现类service接口

```
package com.zh.service;

import com.zh.pojo.Books;
import org.apache.ibatis.annotations.Param;

import java.util.List;

public interface BookService {
```

```
9
10
        //增加一本书
11
        int addBook(Books books);
12
13
14
        int deleteBookById(int id);
15
16
        //修改
17
        int updateBook(Books books);
18
19
        //查询
20
        Books findById(int id);
21
22
        List<Books> findAll();
23
24 }
```

#### 8. service实现方法

```
package com.zh.service.impl;
 1
 2
 3
    import com.zh.mapper.BookMapper;
    import com.zh.pojo.Books;
 4
    import com.zh.service.BookService;
 5
 6
 7
    import java.util.List;
8
9
    public class BookServiceImpl implements BookService{
10
        //调用dao层的操作,设置一个set接口,方便Spring管理
11
12
        private BookMapper bookMapper;
13
        public void setBookMapper(BookMapper bookMapper) {
            this.bookMapper = bookMapper;
14
15
        }
16
17
        @override
18
        public int addBook(Books books) {
            return bookMapper.addBook(books);
19
20
        }
21
        @override
22
23
        public int deleteBookById(int id) {
24
            return bookMapper.deleteBookById(id);
25
        }
26
27
        @override
        public int updateBook(Books books) {
28
29
            return bookMapper.updateBook(books);
30
        }
31
32
        @override
        public Books findById(int id) {
33
34
            return bookMapper.findById(id);
35
        }
36
37
        @override
38
        public List<Books> findAll() {
```

```
39         return bookMapper.findAll();
40     }
41 }
```

# 8、Spring层

## 注意: applicationContext.xml自动导入的头文件不全,需要手动补全

- 1. 配置Spring整合MyBatis, 我们这里数据源使用c3p0连接池;
- 2. 我们去编写Spring整合Mybatis的相关的配置文件

```
1 <!--Spring整合mapper层-->
   <!--1.关联数据库配置文件-->
   <context:property-placeholder</pre>
    location="classpath:database.properties"/>
 5
   <!--2.c3p0连接池-->
 6
    <bean id="dataSource"</pre>
    class="com.mchange.v2.c3p0.ComboPooledDataSource">
        cproperty name="driverClass" value="${jdbc.driver}"/>
        roperty name="jdbcUrl" value="${jdbc.url}"/>
8
9
        cproperty name="user" value="${jdbc.username}"/>
        cproperty name="password" value="${jdbc.password}"/>
10
11
12
        <!-- c3p0连接池的私有属性 -->
        roperty name="maxPoolSize" value="30"/>
13
        roperty name="minPoolSize" value="10"/>
14
15
        <!-- 关闭连接后不自动commit -->
        roperty name="autoCommitOnClose" value="false"/>
16
17
        <!-- 获取连接超时时间 -->
        roperty name="checkoutTimeout" value="10000"/>
18
19
        <!-- 当获取连接失败重试次数 -->
20
        cproperty name="acquireRetryAttempts" value="2"/>
21
    </bean>
22
23
    <!--3.sqlSessionFactory-->
    <bean id="sqlSessionFactory"</pre>
24
    class="org.mybatis.spring.SqlSessionFactoryBean">
25
        roperty name="dataSource" ref="dataSource"/>
        <!--绑定mybatis配置文件-->
26
27
        cproperty name="configLocation" value="classpath:mybatis-
    config.xml"/>
28
    </bean>
29
    <!--4.配置mapper接口扫描包,动态实现了Mapper接口可以注入到spring容器中-->
30
31
   <bean class="org.mybatis.spring.mapper.MapperScannerConfigurer">
32
        <!--注入sqlSessionFactory-->
        roperty name="sqlSessionFactoryBeanName"
33
    value="sqlSessionFactory"/>
34
        <!--要扫描的mapper包-->
35
        cproperty name="basePackage" value="com.zh.mapper"/>
    </bean>
```

### 3. Spring整合service层

```
1 <!--spring整合service层-->
    <!--1.扫描service下的包-->
   <context:component-scan base-package="com.zh.service"/>
 4
  <!--2.将所有业务注入到spring中,可以通过配置和注解-->
   <bean id="bookService" class="com.zh.service.impl.BookServiceImpl">
 6
 7
        roperty name="bookMapper" ref="bookMapper"/>
8
   </bean>
9
10 <!--3.声明式事务配置-->
   <bean id="transactionManager"</pre>
11
    class="org.springframework.jdbc.datasource.DataSourceTransactionManager
12
        <!--注入数据源-->
        cproperty name="dataSource" ref="dataSource"/>
13
14 </bean>
   <!--4.aop事务支持-->
15
16
   <!--结合aop实现事务的织入-->
17 <tx:advice id="txAdvice" transaction-manager="transactionManager">
18
        <tx:attributes>
           <tx:method name="*" propagation="REQUIRED"/>
19
20
        </tx:attributes>
21 </tx:advice>
22 <!--配置事务切入-->
23
   <aop:config>
        <aop:pointcut id="txPointcut" expression="execution(*)</pre>
24
    com.zh.mapper.*.*(..))"/>
25
        <aop:advisor advice-ref="txAdvice" pointcut-ref="txPointcut"/>
26 </aop:config>
```

# 9、SpringMVC层

#### 1. web.xml

注意: maven创建的web项目,需要更改web.xml的头文件,要不配置filter标签报错

```
1
    <?xml version="1.0" encoding="UTF-8"?>
    <web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"</pre>
             xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 3
             xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
 4
 5
             http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd"
             version="4.0">
 6
 7
 8
      <display-name>Archetype Created Web Application/display-name>
9
10
      <!--DispatcherServlet-->
11
      <servlet>
        <servlet-name>springmvc</servlet-name>
12
13
    class>org.springframework.web.servlet.DispatcherServlet</servlet-class>
14
        <init-param>
15
          <param-name>contextConfigLocation</param-name>
16
          <param-value>classpath:applicationContext.xml</param-value>
17
        </init-param>
18
        <load-on-startup>1</load-on-startup>
19
      </servlet>
```

```
20
     <servlet-mapping>
        <servlet-name>springmvc</servlet-name>
21
22
        <url-pattern>/</url-pattern>
23
      </servlet-mapping>
24
25
      <!--乱码过滤-->
26
      <filter>
27
        <filter-name>encodingFilert</filter-name>
28
    class>org.springframework.web.filter.CharacterEncodingFilter</filter-
    class>
29
       <init-param>
30
          <param-name>encoding</param-name>
31
          <param-value>utf-8</param-value>
32
        </init-param>
33
     </filter>
34
      <filter-mapping>
35
        <filter-name>encodingFilert</filter-name>
        <url-pattern>/*</url-pattern>
36
37
      </filter-mapping>
38
39
     <!--session-->
     <session-config>
40
       <session-timeout>15</session-timeout>
41
42
      </session-config>
43
    </web-app>
```

### 2. applicationContext.xml

```
1 <!--SpringMVC-->
       <!--1.注解驱动-->
      <mvc:annotation-driven/>
      <!--2.静态资源过滤-->
       <mvc:default-servlet-handler/>
  6 <!--3.扫描包:controller-->
  7
       <context:component-scan base-package="com.zh.controller" />
  8 <!--4.视图解析器-->
       <bean
  9
       class="org.springframework.web.servlet.view.InternalResourceViewResolve">class="org.springframework.web.servlet.view.InternalResourceViewResolve">class="org.springframework.web.servlet.view.InternalResourceViewResolve">class="org.springframework.web.servlet.view.InternalResourceViewResolve">class="org.springframework.web.servlet.view.InternalResourceViewResolve">class="org.springframework.web.servlet.view.InternalResourceViewResolve
               cproperty name="prefix" value="/WEB-INF/jsp/"/>
10
               cproperty name="suffix" value=".jsp"/>
11
12
       </bean>
```

# 10、Controller层和视图层编写

## 1. 编写首页 index.jsp。进入查询全部

```
a {
8
                text-decoration: none;
9
                color: black;
10
                font-size: 18px;
11
            }
            h3 {
12
13
                width: 180px;
14
                height: 38px;
15
                margin: 100px auto;
16
                text-align: center;
                line-height: 38px;
17
18
                background: deepskyblue;
19
                border-radius: 4px;
20
            }
21
        </style>
22
   </head>
23
   <body>
24
25
   <h3>
26
        <a href="${pageContext.reguest.contextPath}/book/allBook">点击进入列
   表页</a>
27
   </h3>
28
   </body>
29
   </html>
```

### 2. BookController 类编写 , 方法一: 查询全部书籍

```
1
    @Controller
 2
    @RequestMapping("/book")
    public class BookController {
 3
 4
 5
        //controller 调 service层
 6
        @Autowired
 7
        @Qualifier("bookService")
8
        private BookService bookService;
 9
10
        @RequestMapping("/allBook")
        public String allBook(Model model){
11
12
13
            List<Books> list = bookService.findAll();
14
15
            model.addAttribute("list", list);
16
17
            return "allBook";
18
        }
19
   }
```

### 3. 书籍列表页面 allbook.jsp

```
<!-- 引入 Bootstrap -->
       link
   href="https://cdn.bootcss.com/bootstrap/3.3.7/css/bootstrap.min.css"
   rel="stylesheet">
9
   </head>
10
   <body>
11
   <div class="container">
12
13
14
       <div class="row clearfix">
           <div class="col-md-12 column">
15
16
               <div class="page-header">
17
                   < h1>
                      <small>书籍列表 -- 显示所有书籍</small>
18
19
                   </h1>
20
               </div>
           </div>
21
22
       </div>
23
       <div class="row">
24
25
           <div class="col-md-4 column">
26
               <a class="btn btn-primary"</pre>
   href="${pageContext.request.contextPath}/book/toAddBook">新增</a>
               <a class="btn btn-primary"</pre>
27
   href="${pageContext.request.contextPath}/book/allBook">显示全部</a>
28
           </div>
29
           <div class="col-md-8 column">
30
               <%--查询书籍--%>
31
               <form
   action="${pageContext.request.contextPath}/book/findByName"
   style="float:right" class="form-inline" method=post>
                   <span style="color: red;font-weight: bold" >${msg}
32
   </span>
33
                   <input type="text" name="bookName" class="form-control"</pre>
    placeholder="请输入要查询的书名" >
                   <input type="submit" value="查询" class="btn btn-
34
   primary">
35
               </form>
36
           </div>
       </div>
37
38
       <div class="row clearfix">
39
           <div class="col-md-12 column">
40
               41
42
                   <thead>
43
                   44
                       书籍编号
45
                      书籍名字
                      书籍数量
46
47
                      书籍详情
                      操作
48
49
                   </thead>
50
51
52
                   <c:forEach var="book"
53
    items="${requestScope.get('list')}">
54
```

```
55
                        ${book.getBookID()}
56
                        ${book.getBookName()}
57
                        ${book.getBookCounts()}
                        ${book.getDetail()}
58
59
                        60
                           <a
   href="${pageContext.request.contextPath}/book/toUpdateBook?
   id=${book.getBookID()}">更改</a> |
61
   href="${pageContext.request.contextPath}/book/del/${book.getBookID()}">
   删除</a>
62
                        63
                    64
                 </c:forEach>
65
                 66
             67
          </div>
68
       </div>
69 </div>
```

4. BookController 类编写 , 方法二: 去添加书籍页面

```
1     @RequestMapping("/toAddBook")
2     public String toAddBook(){
3         return "addBook";
5     }
```

5. 添加书籍页面: addBook.jsp

```
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
 1
 2
    <%@ page contentType="text/html;charset=UTF-8" language="java" %>
 3
 4
    <html>
 5
    <head>
 6
        <title>新增书籍</title>
 7
        <meta name="viewport" content="width=device-width, initial-</pre>
    scale=1.0">
        <!-- 引入 Bootstrap -->
 8
 9
    href="https://cdn.bootcss.com/bootstrap/3.3.7/css/bootstrap.min.css"
    rel="stylesheet">
    </head>
10
    <body>
11
    <div class="container">
12
13
        <div class="row clearfix">
14
            <div class="col-md-12 column">
15
16
                <div class="page-header">
                    <h1>
17
                         <small>新增书籍</small>
18
19
                    </h1>
                </div>
20
21
            </div>
        </div>
22
```

```
23
        <form action="${pageContext.request.contextPath}/book/addBook"</pre>
    method="post">
            <div class="form-group">
24
25
                <la><label> 书籍名称: </label>
                 <input type="text" class="form-control" name="bookName"</pre>
26
    required>
27
            </div>
            <div class="form-group">
28
29
                <la><label> 书籍数量: </label>
30
                 <input type="text" class="form-control" name="bookCounts"</pre>
    required>
31
            </div>
            <div class="form-group">
32
33
                <label>书籍详情: </label>
                 <input type="text" class="form-control" name="detail"</pre>
34
    required>
35
            </div>
36
            <div class="form-group">
37
                <input type="submit" class="form-control" value="添加">
38
            </div>
39
        </form>
40
41 </div>
```

6. BookController 类编写 , 方法三:添加书籍

7. BookController 类编写 , 方法四: 删除书籍

```
1     @RequestMapping("/del/{id}")
2     public String del(@PathVariable("id") int id){
3
4     bookService.deleteBookById(id);
5
6     return "redirect:/book/allBook";
7  }
```

8. BookController 类编写 , 方法五: 查询一个书籍,跳转修改页面

```
1    @RequestMapping("/toUpdateBook")
2    public String toUpdateBook(int id,Model model){
3         Books books = bookService.findById(id);
5         model.addAttribute("book",books);
7         return "updateBook";
9    }
```

### 9. 修改书籍页面 updateBook.jsp

```
<%@ taglib prefix="c" uri="http://java.sun.com/jsp/jstl/core" %>
    <%@ page contentType="text/html;charset=UTF-8" language="java" %>
 2
 3
    <html>
 4
    <head>
 5
        <title>修改信息</title>
        <meta name="viewport" content="width=device-width, initial-</pre>
 6
    scale=1.0">
 7
        <!-- 引入 Bootstrap -->
 8
        link
    href="https://cdn.bootcss.com/bootstrap/3.3.7/css/bootstrap.min.css"
    rel="stylesheet">
    </head>
9
    <body>
10
    <div class="container">
11
12
        <div class="row clearfix">
13
            <div class="col-md-12 column">
14
15
                <div class="page-header">
                     <h1>
16
17
                         <small>修改书籍</small>
18
                     </h1>
19
                </div>
20
            </div>
        </div>
21
22
23
        <form action="${pageContext.request.contextPath}/book/updateBook"</pre>
    method="post">
            <input type="hidden" name="bookID"</pre>
24
    value="${book.getBookID()}"/>
25
            <div class="form-group">
26
                <label>书籍名称: </label>
                 <input type="text" value="${book.getBookName()}"</pre>
27
    class="form-control" name="bookName" required>
28
            </div>
            <div class="form-group">
29
30
                <label>书籍数量: </label>
                 <input type="text" value="${book.getBookCounts()}"</pre>
31
    class="form-control" name="bookCounts" required>
            </div>
32
33
            <div class="form-group">
34
                <label>书籍详情: </label>
                <input type="text" value="${book.getDetail() }"</pre>
35
    class="form-control" name="detail" required>
36
            </div>
```

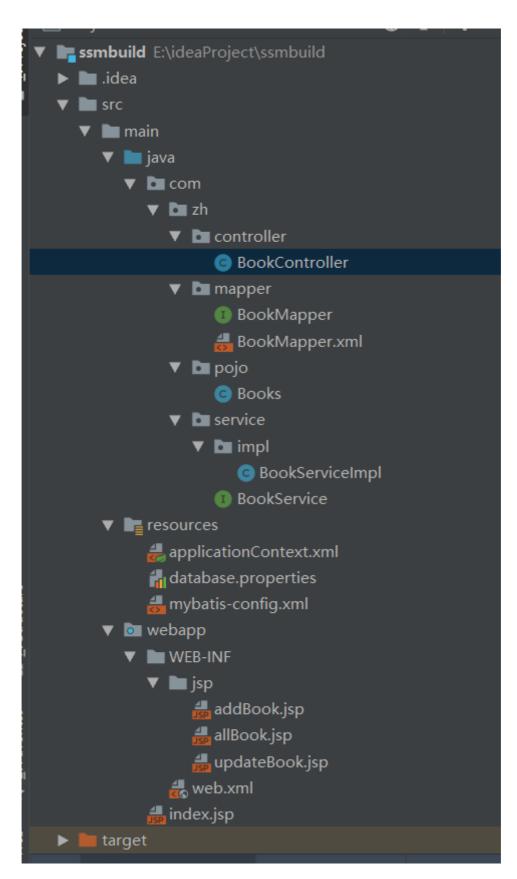
10. BookController 类编写 ,方法六:修改书籍

```
1     @RequestMapping("/updateBook")
2     public String updateBook(Books books){
3         bookService.updateBook(books);
5         return "redirect:/book/allBook";
7     }
```

11. BookController 类编写 ,方法七:查询书籍

```
@RequestMapping("/findByName")
1
2
    public String findByName(String bookName, Model model){
 3
4
        List<Books> list = bookService.findByName(bookName);
 5
 6
        System.out.println("list========"+list);
 7
8
        if (list.size() == 0){
9
10
            System.out.println("list空");
11
            list = bookService.findAll();
12
13
14
            model.addAttribute("msg","没有此书籍");
15
        }
16
17
        model.addAttribute("list", list);
18
19
        return "allBook";
    }
20
```

# 项目结构



# 页面展示

# allBook.jsp

书籍列表 —— 显示所有书籍



# addBook.jsp

新增书籍



## updateBook.jsp

修改书籍

