SSM框架整合

1、整合步骤

1.1 创建maven项目

创建的细节请参考视频。

1.2 pom.xml引入jar依赖

```xml
<packaging>war</packaging>
    <!--SSM整合  spring mybatis mysql等 -->
    <!-- 集中定义依赖版本号 -->
    <properties>
        <spring.version>5.2.13.RELEASE</spring.version>
        <mybatis.version>3.5.6</mybatis.version>
        <mybatis.spring.version>1.3.3</mybatis.spring.version>
        <pagehelper.version>5.1.10</pagehelper.version>
        <mysql.version>8.0.23</mysql.version>
        <druid.version>1.2.3</druid.version>
        <servlet-api.version>4.0.1</servlet-api.version>
        <jackson.version>2.9.6</jackson.version>
        <log4j.version>1.2.17</log4j.version>
        <junit.version>4.12</junit.version>
    </properties>
    <dependencies>
        <!-- spring -->
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-webmvc</artifactId>
            <version>${spring.version}</version>
        </dependency>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-tx</artifactId>
            <version>${spring.version}</version>
        </dependency>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-jdbc</artifactId>
            <version>${spring.version}</version>
        </dependency>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-aspects</artifactId>
            <version>${spring.version}</version>
        </dependency>
        <dependency>
            <groupId>commons-fileupload</groupId>
            <artifactId>commons-fileupload</artifactId>
            <version>1.3.1</version>
        </dependency>
        <!-- Mybatis -->
        <dependency>
            <groupId>org.mybatis</groupId>
            <artifactId>mybatis</artifactId>
            <version>${mybatis.version}</version>
        </dependency>
        <dependency>
            <groupId>org.mybatis</groupId>
            <artifactId>mybatis-spring</artifactId>
            <version>${mybatis.spring.version}</version>
        </dependency>
        <!-- 分页插件 -->
        <dependency>
            <groupId>com.github.pagehelper</groupId>
            <artifactId>pagehelper</artifactId>
            <version>${pagehelper.version}</version>
        </dependency>
        <!-- MySql -->
        <dependency>
            <groupId>mysql</groupId>
            <artifactId>mysql-connector-java</artifactId>
            <version>${mysql.version}</version>
        </dependency>
        <!-- 连接池 -->
        <dependency>
            <groupId>com.alibaba</groupId>
            <artifactId>druid</artifactId>
            <version>${druid.version}</version>
        </dependency>
        <!-- servlet -->
        <dependency>
            <groupId>javax.servlet</groupId>
            <artifactId>javax.servlet-api</artifactId>
            <version>${servlet-api.version}</version>
            <scope>provided</scope>
        </dependency>
        <!-- Jackson Json处理工具包 -->
        <dependency>
            <groupId>com.fasterxml.jackson.core</groupId>
            <artifactId>jackson-databind</artifactId>
            <version>${jackson.version}</version>
        </dependency>
        <!-- log4j -->
        <dependency>
            <groupId>log4j</groupId>
            <artifactId>log4j</artifactId>
            <version>${log4j.version}</version>
        </dependency>
        <!-- junit -->
        <dependency>
            <groupId>junit</groupId>
            <artifactId>junit</artifactId>
            <version>${junit.version}</version>
            <scope>test</scope>
        </dependency>
        <dependency>
            <groupId>org.springframework</groupId>
            <artifactId>spring-test</artifactId>
            <version>${spring.version}</version>
        </dependency>
        <!--@Resource注解的依赖-->
        <dependency>
            <groupId>javax.annotation</groupId>
            <artifactId>javax.annotation-api</artifactId>
            <version>1.3.2</version>
        </dependency>
    </dependencies>

    <!-- 插件配置 -->
    <build>
        <resources>
            <resource>
                <directory>src/main/java</directory><!--所在的目录-->
                <includes><!--包括目录下的.properties,.xml 文件都会被扫描到-->
                    <include>**/*.properties</include>
                    <include>**/*.xml</include>
                </includes>
                <filtering>false</filtering>
            </resource>
        </resources>
        <plugins>
            <!-- 设置项目的编译版本 -->
            <plugin>
                <groupId>org.apache.maven.plugins</groupId>
                <artifactId>maven-compiler-plugin</artifactId>
                <configuration>
                    <source>1.8</source>
                    <target>1.8</target>
                    <encoding>UTF-8</encoding>
                </configuration>
            </plugin>
            <!-- 设置tomcat插件 -->
            <plugin>
                <groupId>org.apache.tomcat.maven</groupId>
                <artifactId>tomcat7-maven-plugin</artifactId>
                <version>2.2</version>
                <configuration>
                    <!-- 指定端口 -->
                    <port>8088</port>
                    <!-- 请求路径 -->
                    <path>/</path>
                    <uriEncoding>UTF-8</uriEncoding>
                </configuration>
            </plugin>
            <!--反向生成插件-->
            <plugin>
                <groupId>org.mybatis.generator</groupId>
                <artifactId>mybatis-generator-maven-plugin</artifactId>
                <version>1.3.5</version>
                <configuration>
                    <!--配置文件的路径-->

 <configurationFile>src/main/resources/generatorConfig.xml</configurationFile>
                    <overwrite>true</overwrite>
                </configuration>
                <dependencies>
                    <dependency>
```

```
                          <groupId>org.mybatis.generator</groupId>
                          <artifactId>mybatis-generator-core</artifactId>
                          <version>1.3.5</version>
                      </dependency>
                  </dependencies>
                  </plugin>
          </plugins>
      </build>
```

1.3 编写Mybatis的配置文件

Mybatis的配置文件mybatis.xml

```
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE configuration
        PUBLIC "-//mybatis.org//DTD Config 3.0//EN"
        "http://mybatis.org/dtd/mybatis-3-config.dtd">
<configuration>
    <settings>
        <setting name="logImpl" value="LOG4J" />
    </settings>
    <!--spring 接管其他的工作 数据源  映射文件注册 插件-->
</configuration>
```

日志配置文件文件log4j.properties：

```
# Global logging configuration  info  warning  error
log4j.rootLogger=DEBUG,stdout
# Console output...
log4j.appender.stdout=org.apache.log4j.ConsoleAppender
log4j.appender.stdout.layout=org.apache.log4j.PatternLayout
log4j.appender.stdout.layout.ConversionPattern=%5p [%t] - %m%n
```

1.4 编写Spring的配置文件spring.xml

连接数据库的参数配置文件jdbc.properties

> 注意案例中使用的数据库版本是MySQL8

```
jdbc.driver=com.mysql.cj.jdbc.Driver
jdbc.url=jdbc:mysql://127.0.0.1:3306/myssm_lina?
useUnicode=true&characterEncoding=utf-8&useSSL=false&serverTimezone=GMT
jdbc.username=root
jdbc.password=root
```

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xmlns:context="http://www.springframework.org/schema/context"
       xmlns:tx="http://www.springframework.org/schema/tx"
       xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd
        http://www.springframework.org/schema/context
http://www.springframework.org/schema/context/spring-context.xsd
```

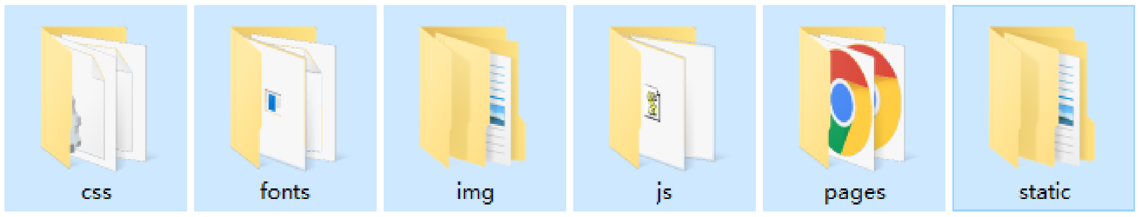
```xml
        http://www.springframework.org/schema/tx
http://www.springframework.org/schema/tx/spring-tx.xsd
        ">

    <!-- 扫描包 -->
    <context:component-scan base-package="com.lina.mapper,com.lina.service">
</context:component-scan>

    <!-- spring 整合mybatis部分 -->
    <context:property-placeholder location="classpath*:jdbc.properties"/>
    <bean id="dataSource"   class="com.alibaba.druid.pool.DruidDataSource">
        <!--可以根据url自动检查出驱动-->
        <property name="driverClassName" value="${jdbc.driver}"></property>
        <property name="url" value="${jdbc.url}"></property>
        <property name="username" value="${jdbc.username}"></property>
        <property name="password" value="${jdbc.password}"></property>
    </bean>
    <bean id="sqlSessionFactory"
class="org.mybatis.spring.SqlSessionFactoryBean">
        <!-- 如果有的话，在这里加载mybatis的配置文件-->
        <property name="configLocation" value="classpath*:mybatis.xml">
</property>
        <property name="dataSource" ref="dataSource"></property>
        <!-- 配置类型别名 -->
        <property name="typeAliasesPackage" value="com.lina.pojo"></property>
        <!-- 映射文件扫描 -->
       <property name="mapperLocations" value="classpath:com/lina/mapper/*.xml">
</property>
        <!-- 插件 -->
        <property name="plugins">
            <array>
                <bean class="com.github.pagehelper.PageInterceptor">
                    <property name="properties">
                        <value>
                            reasonable=true
                        </value>
                    </property>
                </bean>
            </array>
        </property>
    </bean>
    <!-- 映射mybatis的目录 -->
    <!--Mapper接口所在的包名 spring自动查询指定 包下的mapper
    有了MapperScannerConfigurer就不需要我们去为每个映射接口去声明一个bean了。大大缩减了开发
的效率。-->
    <bean id="mapperScannerConfigurer"
class="org.mybatis.spring.mapper.MapperScannerConfigurer">
        <property name="sqlSessionFactoryBeanName" value="sqlSessionFactory"/>
        <property name="basePackage" value="com.lina.mapper"></property>
    </bean>

    <!-- 通过注解方式实现事务 -->
    <tx:annotation-driven transaction-manager="transactionManager"/>
    <bean id="transactionManager"
class="org.springframework.jdbc.datasource.DataSourceTransactionManager">
        <property name="dataSource" ref="dataSource"></property>
    </bean>
```

```
</beans>
```

1.5 编写SpringMVC的配置文件springmvc.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<beans xmlns="http://www.springframework.org/schema/beans"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xmlns:context="http://www.springframework.org/schema/context"
       xmlns:mvc="http://www.springframework.org/schema/mvc"
       xsi:schemaLocation="http://www.springframework.org/schema/beans
http://www.springframework.org/schema/beans/spring-beans.xsd
        http://www.springframework.org/schema/context
http://www.springframework.org/schema/context/spring-context.xsd
        http://www.springframework.org/schema/mvc
http://www.springframework.org/schema/mvc/spring-mvc.xsd
        ">
    <!--springmvc的配置文件:控制器的bean对象都在这里扫描-->
    <context:component-scan base-package="com.lina.controller"/>
    <mvc:annotation-driven/>
    <!--视图解析器-->
    <bean id="internalResourceViewResolver"
class="org.springframework.web.servlet.view.InternalResourceViewResolver">
        <property name="prefix" value="/pages/"/>
        <property name="suffix" value=".html"/>
    </bean>
    <!--静态资源处理-->
    <mvc:resources mapping="/img/**" location="/img/"/>
    <mvc:resources mapping="/js/**" location="/js/"/>
    <mvc:resources mapping="/css/**" location="/css/"/>
    <mvc:resources mapping="/fonts/**" location="/fonts/"/>
    <mvc:resources mapping="/static/**" location="/static/"/>
    <mvc:resources mapping="/pages/**" location="/pages/"/>

    <!--文件上传-->
    <bean id="multipartResolver"
class="org.springframework.web.multipart.commons.CommonsMultipartResolver">
    </bean>
</beans>
```

1.6 导入老师提供的静态资源到webapp文件下



1.7 编写web.xml配置文件

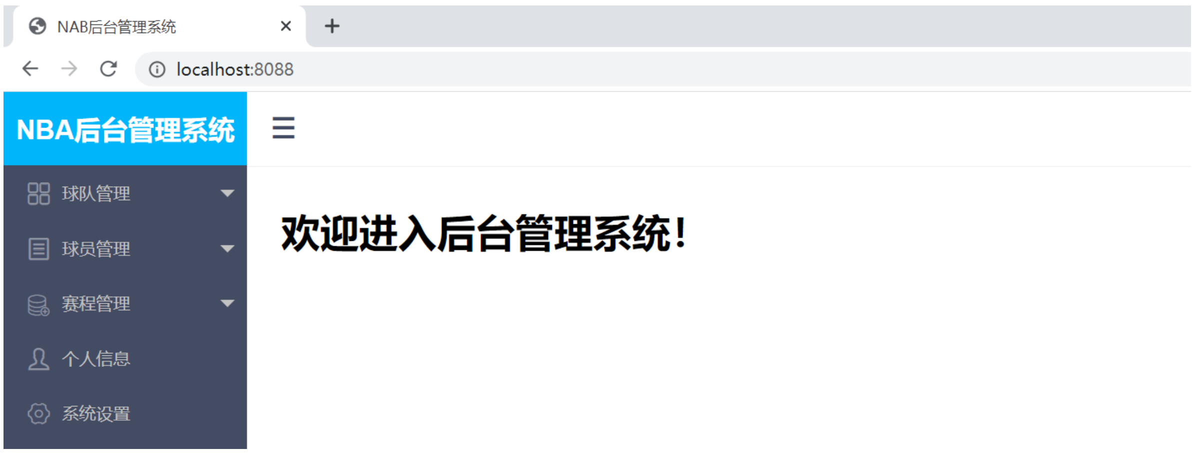
```
<?xml version="1.0" encoding="UTF-8"?>
<web-app xmlns="http://xmlns.jcp.org/xml/ns/javaee"
         xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://xmlns.jcp.org/xml/ns/javaee
http://xmlns.jcp.org/xml/ns/javaee/web-app_4_0.xsd"
```

```
         version="4.0">
    <welcome-file-list>
        <welcome-file>/pages/index.html</welcome-file>
    </welcome-file-list>

    <!--spring的配置-->
    <context-param>
        <!--contextConfigLocation：表示用于加载 Bean的配置文件
            classpath和classpath*区别：
                classpath：只会到你的class路径中查找找文件。
                classpath*：不仅包含class路径，还包括jar文件中（class路径）进行查找。
        -->
        <param-name>contextConfigLocation</param-name>
        <param-value>classpath*:spring.xml</param-value>
    </context-param>
    <listener>
        <listener-
class>org.springframework.web.context.ContextLoaderListener</listener-class>
    </listener>
    <!--SpringMVC的配置-->
    <servlet>
        <servlet-name>dispatcherServlet</servlet-name>
        <servlet-
class>org.springframework.web.servlet.DispatcherServlet</servlet-class>
        <!-- 创建前端控制器的时候读取springmvc配置文件启动ioc容器 -->
        <init-param>
            <param-name>contextConfigLocation</param-name>
            <param-value>classpath*:springmvc.xml</param-value>
        </init-param>
        <!-- Tomcat启动就创建此对象 -->
        <load-on-startup>1</load-on-startup>
    </servlet>
    <!-- 配置拦截路径url，所有请求都会被前端控制器拦截处理 -->
    <servlet-mapping>
        <servlet-name>dispatcherServlet</servlet-name>
        <url-pattern>/</url-pattern>
    </servlet-mapping>

    <!-- 使用Rest风格的URI 将页面普通的post请求转为指定的delete或者put请求
原理：在Ajax中发送post请求后，带_method参数，将其修改为PUT，或者DELETE请求-->
    <filter>
        <filter-name>httpMethodFilter</filter-name>
        <filter-class>
            org.springframework.web.filter.HiddenHttpMethodFilter
        </filter-class>
    </filter>
    <filter-mapping>
        <filter-name>httpMethodFilter</filter-name>
        <url-pattern>/*</url-pattern>
    </filter-mapping>

    <!--注册字符集过滤器：post请求中文乱码问题的解决方案-->
    <filter>
        <filter-name>characterEncodingFilter</filter-name>
        <filter-
class>org.springframework.web.filter.CharacterEncodingFilter</filter-class>
        <!--指定字符集-->
        <init-param>
```

```
                <param-name>encoding</param-name>
                <param-value>UTF-8</param-value>
            </init-param>
            <!--强制request使用字符集encoding-->
            <init-param>
                <param-name>forceRequestEncoding</param-name>
                <param-value>true</param-value>
            </init-param>
            <!--强制response使用字符集encoding-->
            <init-param>
                <param-name>forceResponseEncoding</param-name>
                <param-value>true</param-value>
            </init-param>
        </filter>
        <filter-mapping>
            <filter-name>characterEncodingFilter</filter-name>
            <url-pattern>/*</url-pattern>
        </filter-mapping>
</web-app>
```

1.7 测试

启动项目，浏览器访问http://localhost:8088/。看到如图所示页面表示项目整合成功。



欢迎进入后台管理系统!

2、使用mybatis反向生成实体类、dao和映射文件

2.1 反向生成配置文件generatorConfig.xml

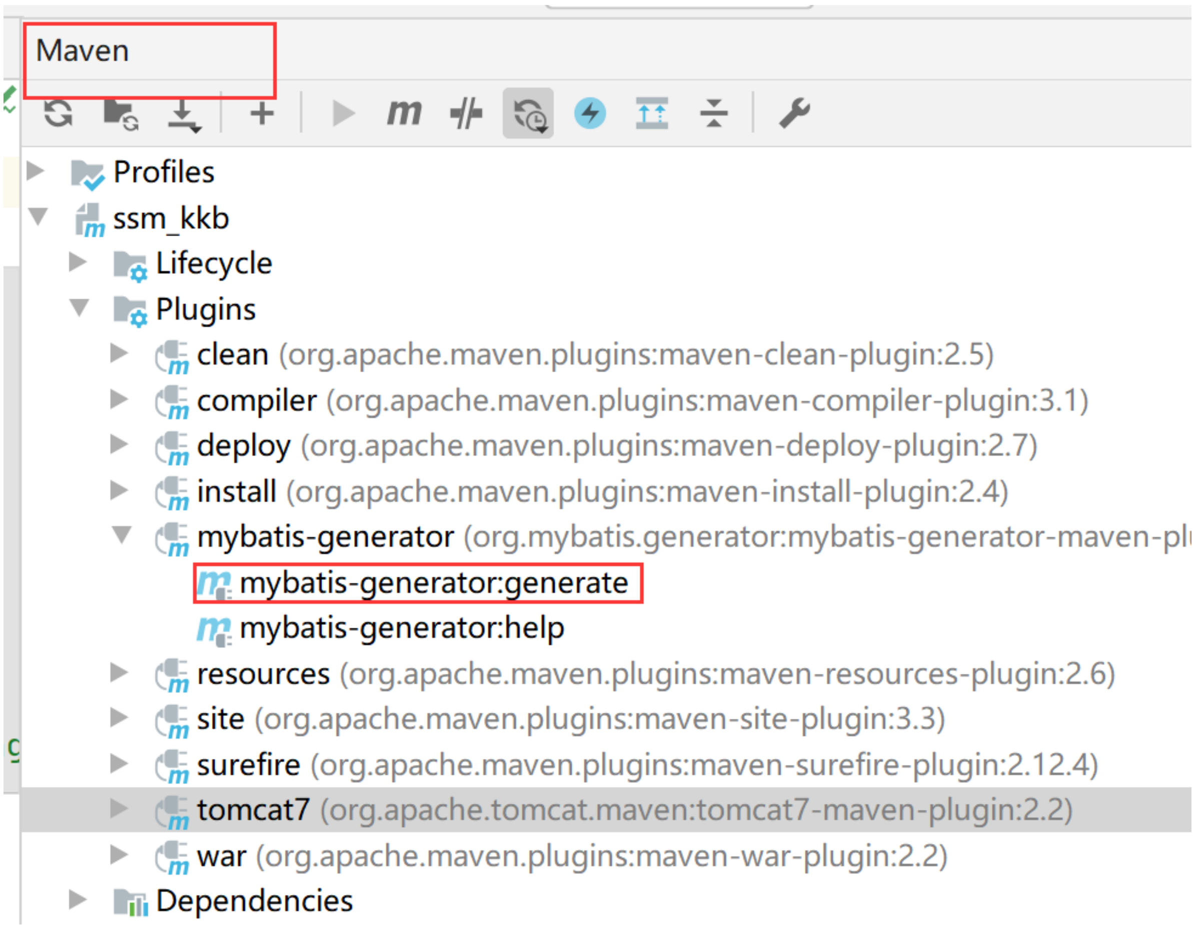
```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE generatorConfiguration
        PUBLIC "-//mybatis.org//DTD MyBatis Generator Configuration 1.0//EN"
        "http://mybatis.org/dtd/mybatis-generator-config_1_0.dtd">

<!-- 配置生成器:所有标有序号的内容都需要修改为自己的内容或者路径 -->
<generatorConfiguration>
    <!--1、数据库驱动jar:添加自己的jar路径 -->
    <classPathEntry
            location="D:\repository\mysql\mysql-connector-java\8.0.23\mysql-
connector-java-8.0.23.jar" />

    <context id="MyBatis" targetRuntime="MyBatis3">
```

```
        <!--去除注释 -->
        <commentGenerator>
            <property name="suppressAllComments" value="true" />
        </commentGenerator>

        <!--2、数据库连接 -->
        <jdbcConnection driverClass="com.mysql.cj.jdbc.Driver"
                        connectionURL="jdbc:mysql://127.0.0.1:3306/myssm_lina?
useUnicode=true&amp;characterEncoding=utf-
8&amp;useSSL=false&amp;serverTimezone=GMT"
                        userId="root"
                        password="root">
        </jdbcConnection>

        <!-- 默认false，把JDBC DECIMAL 和 NUMERIC 类型解析为 Integer;
        为 true时把JDBC DECIMAL和NUMERIC类型解析为java.math.BigDecimal -->
        <javaTypeResolver>
            <property name="forceBigDecimals" value="false" />
        </javaTypeResolver>

        <!--3、生成实体类 指定包名 以及生成的地址 （可以自定义地址，但是路径不存在不会自动创建
        使用Maven生成在target目录下，会自动创建） -->
        <javaModelGenerator targetPackage="com.lina.pojo"
                            targetProject="src\main\java">
            <property name="trimStrings" value="true" />
        </javaModelGenerator>

        <!--4、生成SQLmapper.xml文件 -->
        <sqlMapGenerator targetPackage="com.lina.mapper"
                         targetProject="src\main\resources">
        </sqlMapGenerator>
        <!--5、生成Dao（Mapper）文件,生成接口 -->
        <javaClientGenerator type="XMLMAPPER"
                             targetPackage="com.lina.mapper"
                             targetProject="src\main\java">
        </javaClientGenerator>
        <!--6、要生成哪些表(更改tableName和domainObjectName就可以) -->
        <!-- tableName:要生成的表名
        enableCountByExample:Count语句中加入where条件查询，默认为true开启
        enableUpdateByExample:Update语句中加入where条件查询，默认为true开启
        enableDeleteByExample:Delete语句中加入where条件查询，默认为true开启
        enableSelectByExample:Select多条语句中加入where条件查询，默认为true开启
        selectByExampleQueryId:Select单个对象语句中加入where条件查询，默认为true开启
        -->
        <table tableName="Team">
            <property name="useActualColumnNames" value="true"/>
        </table>
        <table tableName="Player">
            <property name="useActualColumnNames" value="true"/>
        </table>
        <table tableName="game">
            <property name="useActualColumnNames" value="true"/>
        </table>
        <table tableName="GameType">
            <property name="useActualColumnNames" value="true"/>
        </table>
        <table tableName="Admins">
```

```
            <property name="useActualColumnNames" value="true"/>
        </table>
        <table tableName="AdminRole">
            <property name="useActualColumnNames" value="true"/>
        </table>
    </context>
</generatorConfiguration>
```

2.2运行插件

注意只能运行一次,运行完毕显示**BUILD SUCCESS**即为成功。

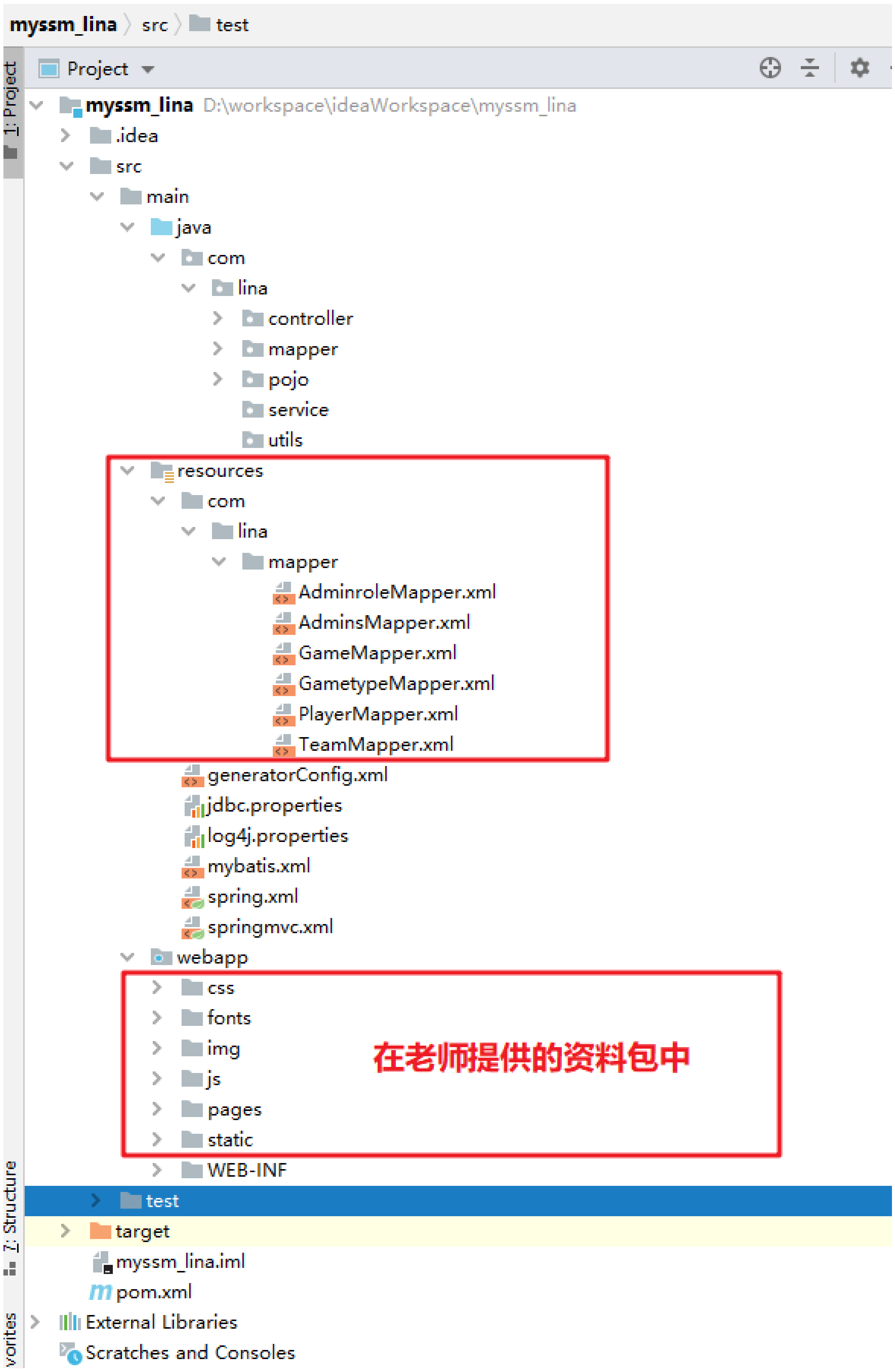

Maven

Profiles
ssm_kkb
Lifecycle
Plugins
clean (org.apache.maven.plugins:maven-clean-plugin:2.5)
compiler (org.apache.maven.plugins:maven-compiler-plugin:3.1)
deploy (org.apache.maven.plugins:maven-deploy-plugin:2.7)
install (org.apache.maven.plugins:maven-install-plugin:2.4)
mybatis-generator (org.mybatis.generator:mybatis-generator-maven-pl
mybatis-generator:generate
mybatis-generator:help
resources (org.apache.maven.plugins:maven-resources-plugin:2.6)
site (org.apache.maven.plugins:maven-site-plugin:3.3)
surefire (org.apache.maven.plugins:maven-surefire-plugin:2.12.4)
tomcat7 (org.apache.tomcat.maven:tomcat7-maven-plugin:2.2)
war (org.apache.maven.plugins:maven-war-plugin:2.2)
Dependencies

2.3 测试

```
package com.lina.test;

import com.lina.mapper.TeamMapper;
import com.lina.pojo.Team;
import org.junit.Test;
import org.junit.runner.RunWith;
import org.springframework.test.context.ContextConfiguration;
import org.springframework.test.context.junit4.SpringJUnit4ClassRunner;

import javax.annotation.Resource;

/**
 * ClassName: TestMapper
 * 测试类
 * @author wanglina
 * @version 1.0
 */
@RunWith(SpringJUnit4ClassRunner.class)
@ContextConfiguration(locations = {"classpath:spring.xml"})
public class TestMapper {
    @Resource
    private TeamMapper teamMapper;
    @Test
    public void test01(){
        Team team = teamMapper.selectByPrimaryKey(1001);
        System.out.println(team);
    }
}
```

2.4 生成完毕之后的目录结构



```
myssm_lina 〉 src 〉 test
Project
myssm_lina D:\workspace\ideaWorkspace\myssm_lina
  .idea
  src
    main
      java
        com
          lina
            controller
            mapper
            pojo
            service
            utils
      resources
        com
          lina
            mapper
              AdminroleMapper.xml
              AdminsMapper.xml
              GameMapper.xml
              GametypeMapper.xml
              PlayerMapper.xml
              TeamMapper.xml
        generatorConfig.xml
        jdbc.properties
        log4j.properties
        mybatis.xml
        spring.xml
        springmvc.xml
      webapp
        css
        fonts
        img
        js
        pages
        static
        WEB-INF
    test
  target
  myssm_lina.iml
  pom.xml
External Libraries
Scratches and Consoles
```

3、综合案例

视频中实现了Team表的增删改查，具体步骤参考视频。