Mybaits 系列课程

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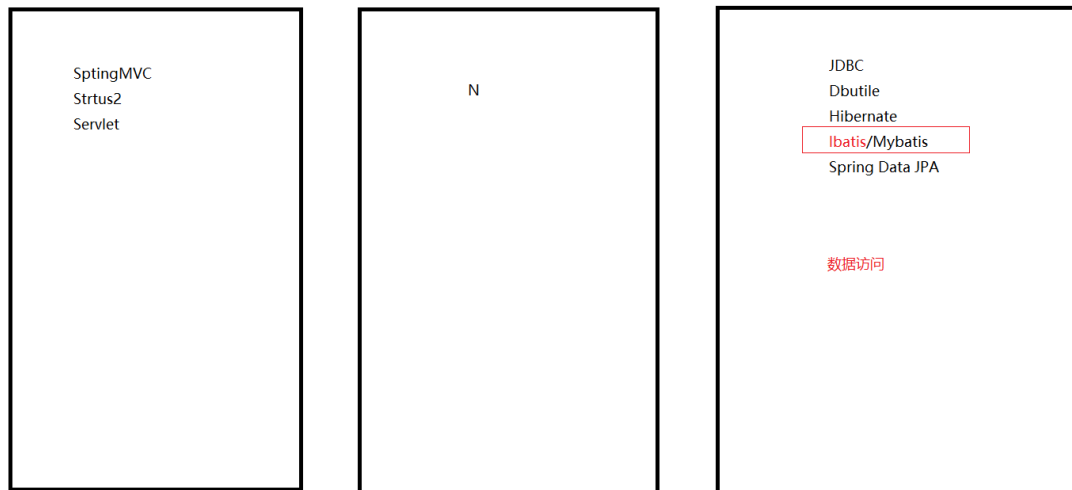邮箱: 896778954@qq.com

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MyBatis 是什么

MyBatis 是一款优秀的持久层框架，它支持定制化 SQL、存储过程以及高级映射。MyBatis 避免了几乎所有的 JDBC 代码和手动设置参数以及获取结果集。MyBatis 可以使用简单的 XML 或注解来配置和映射原生信息，将接口和 Java 的 POJOs(Plain Old Java Objects,普通的 Java 对象)映射成数据库中的记录。

ORM 定义

对象关系映射

Hibernate 是全自动化的 ORM

Ibatis/Mybaits 相比之下是一个半自动化的 ORM

MyBatis CURD

连接数据库

mybatis-config.xml

```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>
    <environments default="development">
        <environment id="development">
            <transactionManager type="JDBC" />
            <dataSource type="POOLED">
                <property name="driver" value="com.mysql.jdbc.Driver" />
                <property name="url" value="jdbc:mysql://localhost:3306/school" />
                <property name="username" value="root" />
                <property name="password" value="root" />
            </dataSource>
        </environment>
    </environments>
</configuration>
```

TestConnection.java

```java
        String resource = "mybatis-config.xml";

        InputStream inputStream = Resources.getResourceAsStream(resource);
```

```
        SqlSessionFactory sqlSessionFactory = new SqlSessionFactoryBuilder().build(inputStream);


        //开启数据库链接
        SqlSession sqlSession=sqlSessionFactory.openSession();


        System.out.println("use curd");


        //关闭数据库链接
        sqlSession.close();
        System.out.println("over");
```

使用 MyBatis 实现添加功能

StudentModel.java

```java
package online.qsx.model;

public class StudentModel {
    private int id;
    private String name;
    private int age;

    public int getId() {
        return id;
    }

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

    public String getName() {
        return name;
    }

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

    public int getAge() {
        return age;
    }
```

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

    public StudentModel(int id, String name, int age) {
        super();
        this.id = id;
        this.name = name;
        this.age = age;
    }

    public StudentModel(String name, int age) {
        super();
        this.name = name;
        this.age = age;
    }

    public StudentModel(int id) {
        super();
        this.id = id;
    }

    public StudentModel() {
        super();
    }

    @Override
    public String toString() {
        return "StudentModel [id=" + id + ", name=" + name + ", age=" +
age + "]";
    }

}
```

StudentMapper.java

```java
package online.qsx.mapper;

import java.util.List;
import java.util.Map;
```

```java
import online.qsx.model.StudentModel;

public interface StudentMapper {
    /**
     * 添加
     * @param student
     * @return
     */
    int save(StudentModel student);
}
```

StudentMapper.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper
  PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
  "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
<mapper namespace="online.qsx.mapper.StudentMapper">

    <insert id="save" parameterType="online.qsx.model.StudentModel">
        insert into tb_student(name,age)
        values(#{name},#{age})
    </insert>

</mapper>
```

mybatis-config.xml

```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>

    <environments default="development">
        <environment id="development">
            <transactionManager type="JDBC" />
            <dataSource type="POOLED">
                <property name="driver" value="com.mysql.jdbc.Driver" />
```

```xml
                <property name="url"
value="jdbc:mysql://localhost:3306/school" />
                <property name="username" value="root" />
                <property name="password" value="root" />
            </dataSource>
        </environment>
    </environments>

    <mappers>
        <mapper resource="online/qsx/mapper/StudentMapper.xml" />
    </mappers>


</configuration>
```

TestCURD.java

```java
package online.qsx.test;

import java.io.IOException;
import java.io.InputStream;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import org.apache.ibatis.io.Resources;
import org.apache.ibatis.session.SqlSession;
import org.apache.ibatis.session.SqlSessionFactory;
import org.apache.ibatis.session.SqlSessionFactoryBuilder;

import online.qsx.mapper.StudentMapper;
import online.qsx.model.StudentModel;

public class TestCURD {
    public static void main(String[] args) throws IOException {
        new TestCURD().save ();
        System.out.println("over");
    }

    SqlSession sqlSession = null;
    StudentMapper studentMapper = null;
```

```java
    public void init() throws IOException {
        String resource = "mybatis-config.xml";
        InputStream inputStream = Resources.getResourceAsStream(resource);
        SqlSessionFactory            sqlSessionFactory            =            new
SqlSessionFactoryBuilder().build(inputStream);
        // 开启数据库链接
        sqlSession = sqlSessionFactory.openSession();

        // 获取 StudentMapper 接口的实现
        studentMapper = sqlSession.getMapper(StudentMapper.class);
    }

    public void destroy() {
        sqlSession.commit();// 提交事物
        // 关闭数据库链接
        sqlSession.close();
    }

    public void save() throws IOException {
        init();
        studentMapper.save(new StudentModel("jack_02", 30));
        destroy();
    }

}
```

使用 **MyBatis** 实现删除功能

StudentMapper.java

```java
package online.qsx.mapper;

import java.util.List;
import java.util.Map;

import online.qsx.model.StudentModel;

public interface StudentMapper {
    /**
```

```
     *  删除
     * @param id
     * @return
     */
    int remove(int id);
}
```

StudentMapper.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper
  PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
  "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
<mapper namespace="online.qsx.mapper.StudentMapper">
    <delete id="remove" parameterType="_int">
        delete from tb_student
        where
            id=#{id}
    </delete>
</mapper>
```

TestCURD.java

```java
package online.qsx.test;

import java.io.IOException;
import java.io.InputStream;
import java.util.HashMap;
import java.util.List;
import java.util.Map;

import org.apache.ibatis.io.Resources;
import org.apache.ibatis.session.SqlSession;
import org.apache.ibatis.session.SqlSessionFactory;
import org.apache.ibatis.session.SqlSessionFactoryBuilder;

import online.qsx.mapper.StudentMapper;
import online.qsx.model.StudentModel;

public class TestCURD {
```

```java
    public static void main(String[] args) throws IOException {
        new TestCURD().remove ();
        System.out.println("over");
    }


    SqlSession sqlSession = null;
    StudentMapper studentMapper = null;

    public void init() throws IOException {
        String resource = "mybatis-config.xml";
        InputStream inputStream = Resources.getResourceAsStream(resource);
        SqlSessionFactory          sqlSessionFactory          =          new
SqlSessionFactoryBuilder().build(inputStream);
        // 开启数据库链接
        sqlSession = sqlSessionFactory.openSession();

        // 获取 StudentMapper 接口的实现
        studentMapper = sqlSession.getMapper(StudentMapper.class);
    }

    public void destroy() {
        sqlSession.commit();// 提交事物
        // 关闭数据库链接
        sqlSession.close();
    }

    public void remove() throws IOException {
        init();
        studentMapper.remove(1);
        destroy();
    }
}
```

使用 MyBatis 实现修改功能

StudentMapper.java

```java
package online.qsx.mapper;

import java.util.List;
```

```java
import java.util.Map;

import online.qsx.model.StudentModel;

public interface StudentMapper {

    /**
     * 修改
     * @param student
     * @return
     */
    int edit(StudentModel student);
}
```

StudentMapper.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper
  PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
  "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
<mapper namespace="online.qsx.mapper.StudentMapper">
    <update id="edit" parameterType="online.qsx.model.StudentModel">
        update
            tb_student
        set
            name=#{name},
            age=#{age}
        where
            id=#{id}
    </update>
</mapper>
```

TestCURD.java

```java
    public void edit() throws IOException {
        init();
        studentMapper.edit(new StudentModel(3, "arvin_003", 22));
        destroy();
    }
```

使用 MyBatis 实现查询一个

StudentMapper.java

```java
package online.qsx.mapper;

import java.util.List;
import java.util.Map;

import online.qsx.model.StudentModel;

public interface StudentMapper {
    /**
     * 查询一个
     * @param id
     * @return
     */
    StudentModel findObject(int id);
}
```

StudentMapper.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper
  PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
  "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
<mapper namespace="online.qsx.mapper.StudentMapper">
    <select id="findObject" parameterType="int"
resultType="online.qsx.model.StudentModel">
        select
            id,name,age
        from
            tb_student
        where
            id=#{id}
    </select>
</mapper>
```

TestCURD.java

```java
public void findObject() throws IOException {
        init();
        StudentModel studentModel = studentMapper.findObject(3);
        System.out.println(studentModel);
        destroy();
}
```

使用 MyBatis 实现查询列表

StudentMapper.java

```java
package online.qsx.mapper;

import java.util.List;
import java.util.Map;

import online.qsx.model.StudentModel;

public interface StudentMapper {
    /**
     * 查询所有
     * @return
     */
    List<StudentModel> findList();
}
```

StudentMapper.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper
  PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
  "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
<mapper namespace="online.qsx.mapper.StudentMapper">
    <select id="findList" resultType="online.qsx.model.StudentModel">
        select
            id,name,age
```

```
        from
            tb_student
    </select>
</mapper>
```

TestCURD.java

```java
public void findList() throws IOException {
        init();
        List<StudentModel> list = studentMapper.findList();
        for (StudentModel studentModel : list) {
            System.out.println(studentModel);
        }
        destroy();
}
```

使用 MyBatis 实现条件查询

StudentMapper.java

```java
package online.qsx.mapper;

import java.util.List;
import java.util.Map;

import online.qsx.model.StudentModel;

public interface StudentMapper {
    /**
     * 根据参数查询
     * @param student
     * @return
     */
    List<StudentModel> findListByParam(StudentModel student);
}
```

StudentMapper.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper
  PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
  "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
<mapper namespace="online.qsx.mapper.StudentMapper">
<select id="findListByParam"
parameterType="online.qsx.model.StudentModel"
resultType="online.qsx.model.StudentModel">
    select
        id,name,age
    from
        tb_student
    where
        name like concat('%',#{name},'%')
        and
        age <![CDATA[ < ]]> #{age}
    </select>
</mapper>
```

TestCURD.java

```java
public void findListByParam() throws IOException {
        init();
        List<StudentModel> list = studentMapper.findListByParam(new StudentModel(0, "2",
31));
        for (StudentModel studentModel : list) {
            System.out.println(studentModel);
        }
        destroy();
    }
```

使用 MyBatis 实现动态条件查询

StudentMapper.java

```java
package online.qsx.mapper;
```

```java
import java.util.List;
import java.util.Map;

import online.qsx.model.StudentModel;

public interface StudentMapper {
    /**
     * 根据参数查询
     * @param student
     * @return
     */
    List<StudentModel> findListByParamDynamic(StudentModel student);

}
```

StudentMapper.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper
  PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
  "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
<mapper namespace="online.qsx.mapper.StudentMapper">
<select id="findListByParamDynamic"
parameterType="online.qsx.model.StudentModel"
resultType="online.qsx.model.StudentModel">
      select
          id,name,age
      from
          tb_student
      <where>
          <if test="name != null">
              and name like concat('%',#{name},'%')
          </if>
          <if test="age>0">
              and  age <![CDATA[ < ]]> #{age}
          </if>
      </where>
   </select>
</mapper>
```

TestCURD.java

```java
public void findListByParamDynamic() throws IOException {
        init();
        List<StudentModel>      list      =      studentMapper.findListByParamDynamic(new
StudentModel(0, "2", 30));
        for (StudentModel studentModel : list) {
            System.out.println(studentModel);
        }
        destroy();
    }
```

使用 MyBatis 实现动态条件分页查询

StudentMapper.java

```java
package online.qsx.mapper;

import java.util.List;
import java.util.Map;

import online.qsx.model.StudentModel;

public interface StudentMapper {
    /**
     * 查询所有
     * @return
     */
    List<StudentModel> findPageList(Map<String, Object> map);
}
```

StudentMapper.xml

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper
  PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
  "http://mybatis.org/dtd/mybatis-3-mapper.dtd">
```

```xml
<mapper namespace="online.qsx.mapper.StudentMapper">
    <select id="findPageList" parameterType="map"
resultType="online.qsx.model.StudentModel">
        select
            id,name,age
        from
            tb_student
        <where>
            <if test="obj.name != null">
                and name like concat('%',#{obj.name},'%')
            </if>
            <if test="obj.age>0">
                and  age <![CDATA[ < ]]> #{obj.age}
            </if>
        </where>

        limit #{cross},#{size}
    </select>
</mapper>
```

TestCURD.java

```java
public void findPageList() throws IOException {
        init();

        Map<String, Object> map=new HashMap<String, Object>();
        map.put("obj", new StudentModel(0, "2", 31));
        map.put("cross", (2-1)*2);
        map.put("size", 2);

        List<StudentModel> list = studentMapper.findPageList(map);
        for (StudentModel studentModel : list) {
            System.out.println(studentModel);
        }
        destroy();
    }
```

核心配置 mybatis.cfg.xml

插件使用

使用 pagehelper 优化分页

导入 pagehelper 的 jar

pagehelper-5.0.0.jar
jsqlparser-0.9.5.jar

配置 mybaits.cfg.xml

```xml
    <plugins>
        <plugin interceptor="com.github.pagehelper.PageInterceptor">
            <!-- 设置数据库类型 Oracle,Mysql,MariaDB,SQLite,Hsqldb,PostgreSQL 六种数据
库 -->
            <property name="helperDialect" value="mysql" />
        </plugin>
    </plugins>
```

分页使用示例

```java
    SqlSession sqlSession = null;
    StudentMapper studentMapper = null;

    public void init() throws IOException {
        String resource = "mybatis-config.xml";
        InputStream inputStream = Resources.getResourceAsStream(resource);
        SqlSessionFactory sqlSessionFactory = new SqlSessionFactoryBuilder().build(inputStream);
        // 开启数据库链接
        sqlSession = sqlSessionFactory.openSession();


        // 获取StudentMapper接口的实现
        studentMapper = sqlSession.getMapper(StudentMapper.class);
    }


    public void destroy() {
```

```java
        sqlSession.commit();// 提交事物
        // 关闭数据库链接
        sqlSession.close();
    }


    public void testFindAll() throws IOException {
        init();
        PageHelper.startPage(3, 3);//使用分页
        List<StudentModel> list = studentMapper.findAll();
        PageInfo<StudentModel> pageInfo=new PageInfo<>(list);//获取分页信息
        System.out.println(pageInfo.toString());
        for (StudentModel studentModel : list) {
            System.out.println(studentModel);
        }
        destroy();
    }


    public static void main(String[] args) throws IOException {
        new TestQuery().testFindAll();
        System.out.println("over");
    }
```

别名

指定加载类为某个名称

```xml
<!-- 别名 -->
<typeAliases>
    <typeAlias alias="StudentModel" type="online.qsx.model.StudentModel" />
</typeAliases>
```

扫描包

```xml
<!-- 别名 -->
<typeAliases>
        <package name="online.qsx.model"/>
</typeAliases>
```

属性文件配置

定义 jdbc.properties

```
jdbc.driver=com.mysql.jdbc.Driver
jdbc.url=jdbc:mysql://localhost:3306/school
jdbc.username=root
jdbc.password=root
```

优化数据库连接

```xml
<!-- 数据库环境 -->
    <environments default="development">
        <environment id="development">
            <transactionManager type="JDBC" />
            <dataSource type="POOLED">
                <property name="driver" value="${jdbc.driver}" />
                <property name="url" value="${jdbc.url}" />
                <property name="username" value="${jdbc.username}" />
                <property name="password" value="${jdbc.password}" />
            </dataSource>
        </environment>
    </environments>
```

使用 generator-core 自动化 SQL

导入 mybatis-generator-core-1.3.2.jar

配置 generatorConfig.xml

```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">

<generatorConfiguration>
    <context id="testTables" targetRuntime="MyBatis3">
```

```xml
        <plugin type="org.mybatis.generator.plugins.SerializablePlugin"></plugin>
        <plugin type="org.mybatis.generator.plugins.ToStringPlugin" />


        <!-- 开启支持内存分页 可生成 支持内存分布的方法及参数 <plugin
type="org.mybatis.generator.plugins.RowBoundsPlugin" /> -->
        <!-- generate entity时，生成hashcode和equals方法 <plugin
type="org.mybatis.generator.plugins.EqualsHashCodePlugin" /> -->
        <!-- 此处是将Example改名为Criteria 当然 想改成什么都行~ -->
        <plugin type="org.mybatis.generator.plugins.RenameExampleClassPlugin">
            <property name="searchString" value="Example$" />
            <!-- 替换后 <property name="replaceString" value="Criteria" /> -->
            <property name="replaceString" value="Criteria" />
        </plugin>



        <!--数据库连接的信息：驱动类、连接地址、用户名、密码 -->
        <jdbcConnection driverClass="com.mysql.jdbc.Driver"
connectionURL="jdbc:mysql://localhost:3306/school" userId="root" password="root">
        </jdbcConnection>
        <!-- <jdbcConnection driverClass="oracle.jdbc.OracleDriver"
connectionURL="jdbc:oracle:thin:@127.0.0.1:1521:aaaa"
            userId="aaaa" password="aaaa"> </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>



        <!-- targetProject:生成PO类的位置 -->
        <javaModelGenerator targetPackage="online.qsx.model" targetProject=".\src">
            <!-- enableSubPackages:是否让schema作为包的后缀 -->
            <property name="enableSubPackages" value="false" />
            <!-- 从数据库返回的值被清理前后的空格 -->
            <property name="trimStrings" value="true" />
        </javaModelGenerator>

        <!-- targetProject:mapper映射文件生成的位置 -->
        <sqlMapGenerator targetPackage="online.qsx.mapper" targetProject=".\src">
            <!-- enableSubPackages:是否让schema作为包的后缀 -->
            <property name="enableSubPackages" value="false" />
        </sqlMapGenerator>
        <!-- targetPackage: mapper接口生成的位置 -->
```

```xml
            <javaClientGenerator type="XMLMAPPER" targetPackage="online.qsx.mapper"
targetProject=".\src">
                <!-- enableSubPackages:是否让schema作为包的后缀 -->
                <property name="enableSubPackages" value="true" />
        </javaClientGenerator>


        <table schema="" tableName="grade" domainObjectName="GradeModel" />


        <!--
        <table schema="" tableName="student" domainObjectName="StudentModel" />
        <table schema="" tableName="subject" domainObjectName="SubjectModel" />
        <table schema="" tableName="result" domainObjectName="resultModel" />
        -->


    </context>
</generatorConfiguration>
```

加载 generatorConfig.xml 生成 mybaits 各种配置

```java
List<String> warnings = new ArrayList<String>();
boolean overwrite = true;
File configFile = new File("G:/Java4/MyBatisQuery/src/online/qsx/test/generatorConfig.xml");
ConfigurationParser cp = new ConfigurationParser(warnings);
Configuration config = cp.parseConfiguration(configFile);
DefaultShellCallback callback = new DefaultShellCallback(overwrite);
MyBatisGenerator myBatisGenerator = new MyBatisGenerator(config, callback, warnings);
myBatisGenerator.generate(null);


System.out.println("生成ok");
```

生成后的类结构

开发示例

```java
package online.qsx.test;

import java.io.IOException;
import java.io.InputStream;
import java.util.List;

import org.apache.ibatis.io.Resources;
import org.apache.ibatis.session.SqlSession;
import org.apache.ibatis.session.SqlSessionFactory;
import org.apache.ibatis.session.SqlSessionFactoryBuilder;

import online.qsx.mapper.GradeModelMapper;
import online.qsx.model.GradeModel;
import online.qsx.model.GradeModelCriteria;
import online.qsx.model.GradeModelCriteria.Criteria;

public class TestQuery {
    SqlSession sqlSession = null;
    GradeModelMapper gradeModelMapper;
    public void init() throws IOException {
        String resource = "mybatis-config.xml";
        InputStream inputStream = Resources.getResourceAsStream(resource);
        SqlSessionFactory sqlSessionFactory = new SqlSessionFactoryBuilder().build(inputStream);
        // 开启数据库链接
        sqlSession = sqlSessionFactory.openSession();

        gradeModelMapper=sqlSession.getMapper(GradeModelMapper.class);
    }

    public void destroy() {
        sqlSession.commit();// 提交事物
        // 关闭数据库链接
        sqlSession.close();
    }


    public void test() throws IOException{
        init();

        GradeModelCriteria gradeModelCriteria=new GradeModelCriteria();//条件工具
```

```
            Criteria criteria=gradeModelCriteria.createCriteria();//条件对象

            criteria.andGradenameLike("%大%");//添加年级条件

            criteria.andGradeidGreaterThan(2);//添加年级编号条件

            List<GradeModel> list= gradeModelMapper.selectByExample(gradeModelCriteria);//执行查询

            for (GradeModel gradeModel : list) {
                System.out.println(gradeModel);
            }
            destroy();
    }

    public static void main(String[] args) throws IOException {
        new TestQuery().test();
    }

}
```

多对一/一对一 MyBatis 解决方案

GradeModel.java

```java
package online.qsx.model;

import java.io.Serializable;
import java.util.List;

public class GradeModel implements Serializable {
    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column grade.GradeID
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Integer gradeid;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column grade.GradeName
     *
```

```java
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
private String gradename;

/**
 * This field was generated by MyBatis Generator.
 * This field corresponds to the database table grade
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
private static final long serialVersionUID = 1L;

/**
 * This method was generated by MyBatis Generator.
 * This method returns the value of the database column grade.GradeID
 *
 * @return the value of grade.GradeID
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public Integer getGradeid() {
    return gradeid;
}

/**
 * This method was generated by MyBatis Generator.
 * This method sets the value of the database column grade.GradeID
 *
 * @param gradeid the value for grade.GradeID
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setGradeid(Integer gradeid) {
    this.gradeid = gradeid;
}

/**
 * This method was generated by MyBatis Generator.
 * This method returns the value of the database column grade.GradeName
 *
 * @return the value of grade.GradeName
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
```

```java
    public String getGradename() {
        return gradename;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column grade.GradeName
     *
     * @param gradename the value for grade.GradeName
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setGradename(String gradename) {
        this.gradename = gradename == null ? null : gradename.trim();
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method corresponds to the database table grade
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    @Override
    public String toString() {
        StringBuilder sb = new StringBuilder();
        sb.append(getClass().getSimpleName());
        sb.append(" [");
        sb.append("Hash = ").append(hashCode());
        sb.append(", gradeid=").append(gradeid);
        sb.append(", gradename=").append(gradename);
        sb.append(", serialVersionUID=").append(serialVersionUID);
        sb.append("]");
        return sb.toString();
    }
}
```

StudentModel.java

```java
package online.qsx.model;

import java.io.Serializable;
import java.util.Date;
```

```java
public class StudentModel implements Serializable {
    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.StudentNo
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Integer studentno;

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.LoginPwd
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String loginpwd;

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.StudentName
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String studentname;

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.Sex
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Boolean sex;

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.GradeId
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Integer gradeid;

    // 特殊属性
    // 多对一/一对一
```

```java
    private GradeModel gradeModel;

    public GradeModel getGradeModel() {
        return gradeModel;
    }

    public void setGradeModel(GradeModel gradeModel) {
        this.gradeModel = gradeModel;
    }

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.Phone
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String phone;

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.Address
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String address;

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.BornDate
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Date borndate;

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
     * the database column student.Email
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String email;

    /**
     * This field was generated by MyBatis Generator. This field corresponds to
```

```java
 * the database column student.IdentityCard
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
private String identitycard;

/**
 * This field was generated by MyBatis Generator. This field corresponds to
 * the database table student
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
private static final long serialVersionUID = 1L;

/**
 * This method was generated by MyBatis Generator. This method returns the
 * value of the database column student.StudentNo
 *
 * @return the value of student.StudentNo
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public Integer getStudentno() {
    return studentno;
}

/**
 * This method was generated by MyBatis Generator. This method sets the
 * value of the database column student.StudentNo
 *
 * @param studentno
 *                the value for student.StudentNo
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setStudentno(Integer studentno) {
    this.studentno = studentno;
}

/**
 * This method was generated by MyBatis Generator. This method returns the
 * value of the database column student.LoginPwd
 *
 * @return the value of student.LoginPwd
```

```java
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getLoginpwd() {
        return loginpwd;
    }

    /**
     * This method was generated by MyBatis Generator. This method sets the
     * value of the database column student.LoginPwd
     *
     * @param loginpwd
     *                the value for student.LoginPwd
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setLoginpwd(String loginpwd) {
        this.loginpwd = loginpwd == null ? null : loginpwd.trim();
    }

    /**
     * This method was generated by MyBatis Generator. This method returns the
     * value of the database column student.StudentName
     *
     * @return the value of student.StudentName
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getStudentname() {
        return studentname;
    }

    /**
     * This method was generated by MyBatis Generator. This method sets the
     * value of the database column student.StudentName
     *
     * @param studentname
     *                the value for student.StudentName
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setStudentname(String studentname) {
        this.studentname = studentname == null ? null : studentname.trim();
    }
```

```java
/**
 * This method was generated by MyBatis Generator. This method returns the
 * value of the database column student.Sex
 *
 * @return the value of student.Sex
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public Boolean getSex() {
    return sex;
}

/**
 * This method was generated by MyBatis Generator. This method sets the
 * value of the database column student.Sex
 *
 * @param sex
 *                the value for student.Sex
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setSex(Boolean sex) {
    this.sex = sex;
}

/**
 * This method was generated by MyBatis Generator. This method returns the
 * value of the database column student.GradeId
 *
 * @return the value of student.GradeId
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public Integer getGradeid() {
    return gradeid;
}

/**
 * This method was generated by MyBatis Generator. This method sets the
 * value of the database column student.GradeId
 *
 * @param gradeid
 *                the value for student.GradeId
```

```java
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setGradeid(Integer gradeid) {
        this.gradeid = gradeid;
    }

    /**
     * This method was generated by MyBatis Generator. This method returns the
     * value of the database column student.Phone
     *
     * @return the value of student.Phone
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getPhone() {
        return phone;
    }

    /**
     * This method was generated by MyBatis Generator. This method sets the
     * value of the database column student.Phone
     *
     * @param phone
     *            the value for student.Phone
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setPhone(String phone) {
        this.phone = phone == null ? null : phone.trim();
    }

    /**
     * This method was generated by MyBatis Generator. This method returns the
     * value of the database column student.Address
     *
     * @return the value of student.Address
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getAddress() {
        return address;
    }
```

```java
/**
 * This method was generated by MyBatis Generator. This method sets the
 * value of the database column student.Address
 *
 * @param address
 *                 the value for student.Address
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setAddress(String address) {
    this.address = address == null ? null : address.trim();
}

/**
 * This method was generated by MyBatis Generator. This method returns the
 * value of the database column student.BornDate
 *
 * @return the value of student.BornDate
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public Date getBorndate() {
    return borndate;
}

/**
 * This method was generated by MyBatis Generator. This method sets the
 * value of the database column student.BornDate
 *
 * @param borndate
 *                 the value for student.BornDate
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setBorndate(Date borndate) {
    this.borndate = borndate;
}

/**
 * This method was generated by MyBatis Generator. This method returns the
 * value of the database column student.Email
 *
 * @return the value of student.Email
 *
```

```java
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public String getEmail() {
    return email;
}

/**
 * This method was generated by MyBatis Generator. This method sets the
 * value of the database column student.Email
 *
 * @param email
 *                the value for student.Email
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setEmail(String email) {
    this.email = email == null ? null : email.trim();
}

/**
 * This method was generated by MyBatis Generator. This method returns the
 * value of the database column student.IdentityCard
 *
 * @return the value of student.IdentityCard
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public String getIdentitycard() {
    return identitycard;
}

/**
 * This method was generated by MyBatis Generator. This method sets the
 * value of the database column student.IdentityCard
 *
 * @param identitycard
 *                the value for student.IdentityCard
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setIdentitycard(String identitycard) {
    this.identitycard = identitycard == null ? null : identitycard.trim();
}
```

```
    /**
     * This method was generated by MyBatis Generator. This method corresponds
     * to the database table student
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    @Override
    public String toString() {
        StringBuilder sb = new StringBuilder();
        sb.append(getClass().getSimpleName());
        sb.append(" [");
        sb.append("Hash = ").append(hashCode());
        sb.append(", studentno=").append(studentno);
        sb.append(", loginpwd=").append(loginpwd);
        sb.append(", studentname=").append(studentname);
        sb.append(", sex=").append(sex);
        sb.append(", gradeid=").append(gradeid);
        sb.append(", phone=").append(phone);
        sb.append(", address=").append(address);
        sb.append(", borndate=").append(borndate);
        sb.append(", email=").append(email);
        sb.append(", identitycard=").append(identitycard);
        sb.append(", GradeModel=").append(this.getGradeModel().toString());
        sb.append(", serialVersionUID=").append(serialVersionUID);
        sb.append("]");
        return sb.toString();
    }
}
```

StudentModelMapper.java

```
package online.qsx.mapper;

import java.util.List;
import online.qsx.model.StudentModel;

public interface StudentModelMapper {
    List<StudentModel> findStudentAndGrade();
}
```

StudentModelMapper.xml

嵌套

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
"http://mybatis.org/dtd/mybatis-3-mapper.dtd" >
<mapper namespace="online.qsx.mapper.StudentModelMapper" >
  <resultMap id="StudentModel01" type="online.qsx.model.StudentModel">
    <id property="studentno" column="studentno" />
    <result property="loginpwd" column="loginpwd"/>
    <result property="studentname" column="studentname"/>
    <result property="sex" column="sex"/>
    <result property="phone" column="phone"/>
    <result property="address" column="address"/>
    <result property="email" column="email"/>
    <result property="identitycard" column="identitycard"/>


    <!-- 多对一/一对一 -->
    <association property="gradeModel" javaType="online.qsx.model.GradeModel"
column="s_gid" >
        <id property="gradeid" column="g_id" />
        <result property="gradename" column="gradename"/>
    </association>
  </resultMap>

  <select id="findStudentAndGrade" resultMap="StudentModel01" >
    select
        stu.studentno,
        stu.loginpwd,
        stu.studentname,
        stu.sex,
        stu.gradeid as s_gid,
        stu.phone,
        stu.address,
        stu.borndate,
        stu.email,
        stu.identitycard,

        gra.gradeid as g_id,
        gra.gradename
```

```
    from
        student stu
    inner join grade gra on gra.gradeid=stu.gradeid
  </select>
</mapper >
```

分离 ResultMap 相互引用

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
"http://mybatis.org/dtd/mybatis-3-mapper.dtd" >
<mapper namespace="online.qsx.mapper.StudentModelMapper" >
  <resultMap id="StudentModel01" type="online.qsx.model.StudentModel">
    <id property="studentno" column="studentno" />
    <result property="loginpwd" column="loginpwd"/>
    <result property="studentname" column="studentname"/>
    <result property="sex" column="sex"/>
    <result property="phone" column="phone"/>
    <result property="address" column="address"/>
    <result property="email" column="email"/>
    <result property="identitycard" column="identitycard"/>


    <!-- 多对一/一对一 -->
    <association property="gradeModel" resultMap="GradeModel01" column="s_gid" />
  </resultMap>

  <resultMap type="online.qsx.model.GradeModel" id="GradeModel01">
    <id property="gradeid" column="g_id" />
    <result property="gradename" column="gradename"/>
  </resultMap>

  <select id="findStudentAndGrade" resultMap="StudentModel01" >
    select
        stu.studentno,
        stu.loginpwd,
        stu.studentname,
        stu.sex,
        stu.gradeid as s_gid,
        stu.phone,
        stu.address,
        stu.borndate,
        stu.email,
```

```
        stu.identitycard,

        gra.gradeid as g_id,
        gra.gradename
    from
        student stu
    inner join grade gra on gra.gradeid=stu.gradeid
  </select>
</mapper >
```

TestQuery.java

```java
public void find() throws IOException{
        init();
        List<StudentModel> list= studentModelMapper.findStudentAndGrade();
        for (StudentModel studentModel : list) {
            System.out.println(studentModel);
        }
        destroy();
}
```

一对多/多对多 MyBatis 解决方案

StudentModel.java

```java
package online.qsx.model;

import java.io.Serializable;
import java.util.Date;

public class StudentModel implements Serializable {
    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.StudentNo
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Integer studentno;


    /**
```

```java
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.LoginPwd
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String loginpwd;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.StudentName
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String studentname;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.Sex
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Boolean sex;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.GradeId
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Integer gradeid;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.Phone
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String phone;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.Address
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
```

```java
     */
    private String address;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.BornDate
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Date borndate;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.Email
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String email;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column student.IdentityCard
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String identitycard;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database table student
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private static final long serialVersionUID = 1L;

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.StudentNo
     *
     * @return the value of student.StudentNo
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public Integer getStudentno() {
```

```java
        return studentno;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.StudentNo
     *
     * @param studentno the value for student.StudentNo
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setStudentno(Integer studentno) {
        this.studentno = studentno;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.LoginPwd
     *
     * @return the value of student.LoginPwd
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getLoginpwd() {
        return loginpwd;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.LoginPwd
     *
     * @param loginpwd the value for student.LoginPwd
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setLoginpwd(String loginpwd) {
        this.loginpwd = loginpwd == null ? null : loginpwd.trim();
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.StudentName
     *
     * @return the value of student.StudentName
```

```java
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getStudentname() {
        return studentname;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.StudentName
     *
     * @param studentname the value for student.StudentName
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setStudentname(String studentname) {
        this.studentname = studentname == null ? null : studentname.trim();
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.Sex
     *
     * @return the value of student.Sex
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public Boolean getSex() {
        return sex;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.Sex
     *
     * @param sex the value for student.Sex
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setSex(Boolean sex) {
        this.sex = sex;
    }

    /**
```

```java
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.GradeId
     *
     * @return the value of student.GradeId
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public Integer getGradeid() {
        return gradeid;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.GradeId
     *
     * @param gradeid the value for student.GradeId
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setGradeid(Integer gradeid) {
        this.gradeid = gradeid;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.Phone
     *
     * @return the value of student.Phone
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getPhone() {
        return phone;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.Phone
     *
     * @param phone the value for student.Phone
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setPhone(String phone) {
```

```java
        this.phone = phone == null ? null : phone.trim();
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.Address
     *
     * @return the value of student.Address
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getAddress() {
        return address;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.Address
     *
     * @param address the value for student.Address
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setAddress(String address) {
        this.address = address == null ? null : address.trim();
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.BornDate
     *
     * @return the value of student.BornDate
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public Date getBorndate() {
        return borndate;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.BornDate
     *
     * @param borndate the value for student.BornDate
```

```java
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setBorndate(Date borndate) {
        this.borndate = borndate;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.Email
     *
     * @return the value of student.Email
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getEmail() {
        return email;
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method sets the value of the database column student.Email
     *
     * @param email the value for student.Email
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public void setEmail(String email) {
        this.email = email == null ? null : email.trim();
    }

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column student.IdentityCard
     *
     * @return the value of student.IdentityCard
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    public String getIdentitycard() {
        return identitycard;
    }

    /**
```

```
    * This method was generated by MyBatis Generator.
    * This method sets the value of the database column student.IdentityCard
    *
    * @param identitycard the value for student.IdentityCard
    *
    * @mbggenerated Mon Nov 20 15:52:42 CST 2017
    */
   public void setIdentitycard(String identitycard) {
        this.identitycard = identitycard == null ? null : identitycard.trim();
   }

   /**
    * This method was generated by MyBatis Generator.
    * This method corresponds to the database table student
    *
    * @mbggenerated Mon Nov 20 15:52:42 CST 2017
    */
   @Override
   public String toString() {
        StringBuilder sb = new StringBuilder();
        sb.append(getClass().getSimpleName());
        sb.append(" [");
        sb.append("Hash = ").append(hashCode());
        sb.append(", studentno=").append(studentno);
        sb.append(", loginpwd=").append(loginpwd);
        sb.append(", studentname=").append(studentname);
        sb.append(", sex=").append(sex);
        sb.append(", gradeid=").append(gradeid);
        sb.append(", phone=").append(phone);
        sb.append(", address=").append(address);
        sb.append(", borndate=").append(borndate);
        sb.append(", email=").append(email);
        sb.append(", identitycard=").append(identitycard);
        sb.append(", serialVersionUID=").append(serialVersionUID);
        sb.append("]");
        return sb.toString();
   }
}
```

GradeModel.java

```
package online.qsx.model;
```

```java
import java.io.Serializable;
import java.util.List;

public class GradeModel implements Serializable {
    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column grade.GradeID
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private Integer gradeid;

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database column grade.GradeName
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private String gradename;

    //多对多/一对多
    private List<StudentModel> studentModels;


    public List<StudentModel> getStudentModels() {
        return studentModels;
    }

    public void setStudentModels(List<StudentModel> studentModels) {
        this.studentModels = studentModels;
    }

    /**
     * This field was generated by MyBatis Generator.
     * This field corresponds to the database table grade
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    private static final long serialVersionUID = 1L;

    /**
     * This method was generated by MyBatis Generator.
     * This method returns the value of the database column grade.GradeID
```

```java
 *
 * @return the value of grade.GradeID
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public Integer getGradeid() {
    return gradeid;
}

/**
 * This method was generated by MyBatis Generator.
 * This method sets the value of the database column grade.GradeID
 *
 * @param gradeid the value for grade.GradeID
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setGradeid(Integer gradeid) {
    this.gradeid = gradeid;
}

/**
 * This method was generated by MyBatis Generator.
 * This method returns the value of the database column grade.GradeName
 *
 * @return the value of grade.GradeName
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public String getGradename() {
    return gradename;
}

/**
 * This method was generated by MyBatis Generator.
 * This method sets the value of the database column grade.GradeName
 *
 * @param gradename the value for grade.GradeName
 *
 * @mbggenerated Mon Nov 20 15:52:42 CST 2017
 */
public void setGradename(String gradename) {
    this.gradename = gradename == null ? null : gradename.trim();
}
```

```java
    /**
     * This method was generated by MyBatis Generator.
     * This method corresponds to the database table grade
     *
     * @mbggenerated Mon Nov 20 15:52:42 CST 2017
     */
    @Override
    public String toString() {
        StringBuilder sb = new StringBuilder();
        sb.append(getClass().getSimpleName());
        sb.append(" [");
        sb.append("Hash = ").append(hashCode());
        sb.append(", gradeid=").append(gradeid);
        sb.append(", gradename=").append(gradename);
        sb.append(", studentModels=").append(studentModels.toString());
        sb.append(", serialVersionUID=").append(serialVersionUID);
        sb.append("]");
        return sb.toString();
    }
}
```

GradeModelMapper.java

```java
package online.qsx.mapper;

import java.util.List;
import online.qsx.model.GradeModel;
import online.qsx.model.GradeModelCriteria;
import org.apache.ibatis.annotations.Param;


public interface GradeModelMapper {

    List<GradeModel> findGradeAndStudent();
}
```

GradeModelMapper.xml

嵌套

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
"http://mybatis.org/dtd/mybatis-3-mapper.dtd" >
<mapper namespace="online.qsx.mapper.GradeModelMapper" >
<resultMap id="GraderMap02" type="online.qsx.model.GradeModel">
    <id property="gradeid" column="g_id" />
    <result property="gradename" column="gradename"/>


    <collection property="studentModels" ofType="online.qsx.model.StudentModel">
        <id property="studentno" column="studentno" />
        <result property="Loginpwd" column="Loginpwd"/>
        <result property="studentname" column="studentname"/>
        <result property="sex" column="sex"/>
        <result property="phone" column="phone"/>
        <result property="address" column="address"/>



        <result property="email" column="email"/>
        <result property="identitycard" column="identitycard"/>
    </collection>

</resultMap>

<select id="findGradeAndStudent" resultMap="GraderMap02" >
  select
        stu.studentno,
        stu.loginpwd,
        stu.studentname,
        stu.sex,
        stu.gradeid as s_gid,
        stu.phone,
        stu.address,
        stu.borndate,
        stu.email,
        stu.identitycard,

        gra.gradeid as g_id,
        gra.gradename
```

```
    from
        student stu
    inner join grade gra on gra.gradeid=stu.gradeid
  </select>


</mapper>
```

分离 ResultMap 相互引用

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE mapper PUBLIC "-//mybatis.org//DTD Mapper 3.0//EN"
"http://mybatis.org/dtd/mybatis-3-mapper.dtd" >
<mapper namespace="online.qsx.mapper.GradeModelMapper" >
<resultMap id="GraderMap02" type="online.qsx.model.GradeModel">
      <id property="gradeid" column="g_id" />
      <result property="gradename" column="gradename"/>


      <collection property="studentModels" ofType="online.qsx.model.StudentModel"
resultMap="StudentModel01"></collection>
  </resultMap>


    <resultMap type="online.qsx.model.StudentModel" id="StudentModel01">
        <id property="studentno" column="studentno" />
        <result property="loginpwd" column="loginpwd" />
        <result property="studentname" column="studentname" />
        <result property="sex" column="sex" />
        <result property="phone" column="phone" />
        <result property="address" column="address" />



        <result property="email" column="email" />
        <result property="identitycard" column="identitycard" />
    </resultMap>
  <select id="findGradeAndStudent" resultMap="GraderMap02" >
    select
        stu.studentno,
        stu.loginpwd,
        stu.studentname,
        stu.sex,
        stu.gradeid as s_gid,
        stu.phone,
        stu.address,
```

```
        stu.borndate,

        stu.email,

        stu.identitycard,


        gra.gradeid as g_id,

        gra.gradename

    from

        student stu

    inner join grade gra on gra.gradeid=stu.gradeid

  </select>

</mapper>
```

TestQuery.java

```java
public void find() throws IOException{
        init();
        List<GradeModel> list= gradeModelMapper.findGradeAndStudent();
        for (GradeModel gradeModel : list) {
            System.out.println(gradeModel);
        }
        destroy();
}
```