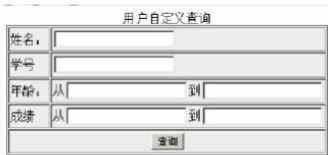


动态SQL

1、概要

动态SQL

动态SQL，主要用于解决查询条件不确定的情况，在程序运行期间，根据用户提交的查询条件进行查询，提交产讯条件不同，执行的sql不同，若将每种可能的情况主键一一列出，对所有的条件进行排列组合，将会出现大量的SQL语句，此时，可使用动态SQL来解决这样的问题。



动态SQL，即通过MyBatis提供的各种标签对条件做出判断以实现动态拼接sql语句。常用的动态SQL标签有<if>,<where>,<choose>,<foreach>等。其语句形式与JSTL中的语句详细。

2、实例

- if标签

- StudentMapper类

```
//多条件查询:动态代理
public List<Student> findStuByAll(int id,String sname ,int sage ,String
ssex);
```

- StudentMapper.xml

```
<select id="findStuByAll" resultType="Student">
    select * from stu where 1 = 1
    <if test="arg0 != 0">
        AND id = #{arg0}
    </if>
    <if test="arg0 != null">
        AND sname like '%' #{arg1} '%'
    </if>
</select>
```

- studentTest类

```
@Test
//多条件查询: 动态代理
public void findStuByAllTest(){
    List<Student> studentList = studentMapper.findStuByAll(0,"沛",0,null);
    for (Student str:studentList){
        System.out.println(str);
    }
}
```

- where标签
 - StudentMapper类
 - StudentMapper.xml

```

<!--: 多条件查询:动态代理-->
<select id="findStuByAll" resultType="Student">
    select * from stu
    <where>
        <if test="arg0 != 0">
            AND id = #{arg0}
        </if>
        <if test="arg0 != null">
            AND sname like '%' #{arg1} '%'
        </if>
    </where>
</select>

```

- studentTest类
- choose标签
 - StudentMapper类
 - StudentMapper.xml

```

<!--: 多条件查询:动态代理-->
<select id="findStuByAll" resultType="Student">
    select * from stu
    <where>
        <choose>
            <when test="arg0 != 0">
                AND id = #{arg0}
            </when>
            <when test="arg0 != null">
                AND sname like '%' #{arg1} '%'
            </when>
        </choose>
    </where>
</select>

```

- studentTest类
- foreach标签

foreach标签

<foreach>标签用于实现对数组与集合的遍历，对其使用，需要注意：

- collection:表示要遍历的集合类型，例如数组（array，list）
- open、close、separator为对遍历内容的SQL拼接

- 遍历数组

- StudentMapper类

```
//多条件查询: 动态代理, 数组
public List<Student> findStudentByInCondition(int[] arr);
```

- StudentMapper.xml

```
<!--: 多条件查询: 动态代理, 数组-->
<select id="findStudentByInCondition" resultType="Student">
    select * from stu
    <where>
        id in
        <foreach collection="array" item="id" open="(" separator=","
close=")">
            #{id}
        </foreach>
    </where>
</select>
```

- studentTest类

```
@Test
//多条件查询: 动态代理, 数组
public void findStudentByInConditionTest(){
    List<Student> studentList =
studentMapper.findStudentByInCondition(new int[]{1,2,3,4,5});
    for (Student str:studentList){
        System.out.println(str);
    }
}
```

- 遍历基本类型的List

- StudentMapper类

```
//多条件查询: 动态代理, list集合
public List<Student> findStudentByInCondition(List<Integer> arr);
```

- StudentMapper.xml

```

<!--: 多条件查询:动态代理, list-->
<select id="findStudentByInCondition" resultType="Student">
    select * from stu
    <where>
        id in
        <foreach collection="list" item="id" open="(" separator=","
close=")">
            #{id}
        </foreach>
    </where>
</select>

```

■ studentTest类

```

@Test
//多条件查询: 动态代理, list
public void findStudentByInConditionTest(){
    List<Integer> list = new ArrayList<>();
    list.add(1);
    list.add(3);
    list.add(5);
    list.add(7);
    list.add(9);
    List<Student> studentList =
studentMapper.findStudentByInCondition(list);
    for (Student str:studentList){
        System.out.println(str);
    }
}

```

○ 遍历自定义类型的List

■ StudentMapper类

```

//多条件查询: 动态代理, 自定义类型地list
public List<Student> findStudentByInCondition(List<Student> arr);

```

■ StudentMapper.xml

```

<!--: 多条件查询:动态代理, 自定义类型-->
<select id="findStudentByInCondition" resultType="Student">
    select * from stu
    <where>
        id in
        <foreach collection="list" item="student" open="("
separator="," close=")">
            #{student.id}
        </foreach>
    </where>
</select>

```

- studentTest类

```
//多条件查询：动态代理，自定义类型Student
public void findStudentByInConditionTest(){
    List<Student> list = new ArrayList<>();
    Student stu1 = new Student();
    stu1.setId(1);
    Student stu2 = new Student();
    stu2.setId(3);
    Student stu3 = new Student();
    stu3.setId(5);
    Student stu4 = new Student();
    stu4.setId(7);
    Student stu5 = new Student();
    stu5.setId(9);
    list.add(stu1);
    list.add(stu2);
    list.add(stu3);
    list.add(stu4);
    list.add(stu5);
    List<Student> studentList =
studentMapper.findStudentByInCondition(list);
    for (Student str:studentList){
        System.out.println(str);
    }
}
```

- 和

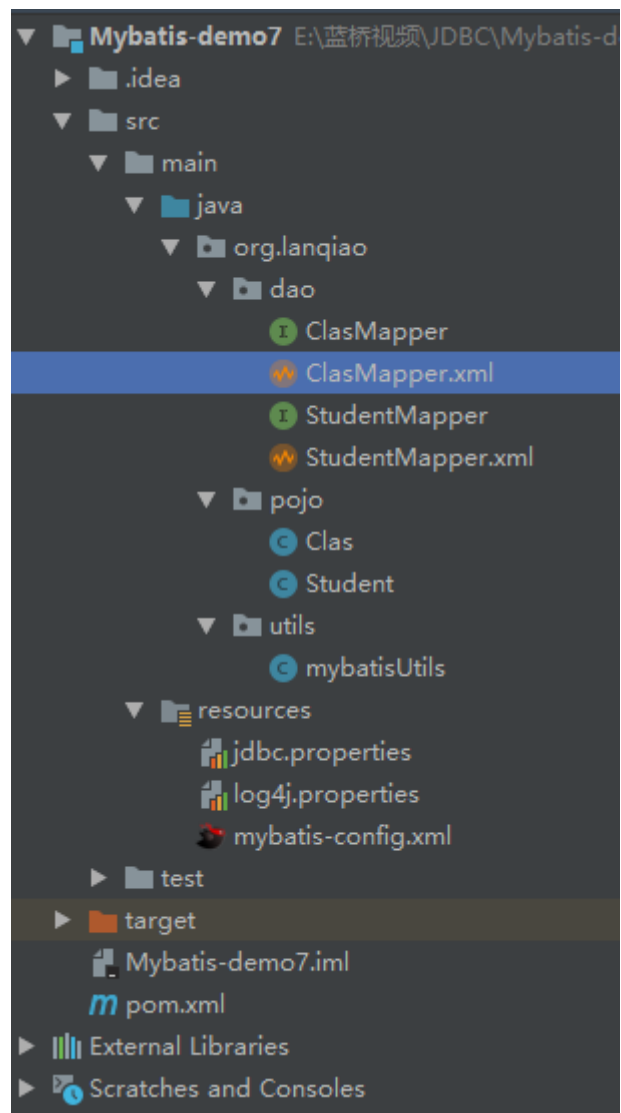
```
<!--sql片段-->
<sql id="basesql">
    select * from stu
</sql>
<!--：多条件查询:动态代理，自定义类型-->
<select id="findStudentByInCondition" resultType="Student">
    <!--包含sql片段-->
    <include refid="basesql"></include>
    <where>
        id in
        <foreach collection="list" item="student" open="(" separator=","
close=")">
            #{student.id}
        </foreach>
    </where>
</select>
```

- 当当

3、高级查询(多表查询)

- 关联查询：查询内容涉及具有多个关系的多个表时

项目结构图:



- 一对多：班级关联学生
 - 多表链接查询
 - pojo层：实体类

```
public class Clas {  
    private int cid;  
    private String cname;  
    //一个班级对应多个学生, Set集合  
    private Set<Student> studentSet;  
    ...  
    ...  
}  
  
public class Student {  
    private int id;  
    private String sname;  
    private int sage;  
    private String ssex;
```

```

        private int cid;
        ...
        ...
    }

```

- dao层

- ClasMapper类

```

//查询：根据班级cid查询班级中学生信息
public Clas findCidByCid(int cid);

```

- ClasMapper.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">
<!--接口-->
<mapper namespace="org.lanqiao.dao.ClasMapper">
    <resultMap id="clasAndstu" type="Clas"><!--即:clas类中,属性的映射-->
        <id column="cid" property="cid"></id>
        <result column="cname" property="cname"></result><!--在其中包含一个集合-->
        <!--设置关联的集合属性,即:Student类,属性的映射-->
        <collection property="studentSet" ofType="Student"><!--属性,对应的类型-->
            <id column="id" property="id"></id>
            <result column="sname" property="sname"></result>
            <result column="ssex" property="ssex"></result>
        </collection>
    </resultMap>
    <select id="findCidByCid" resultMap="clasAndstu">/*结果如何去映射,映射一个实体*/
        select c.cid,c.cname,s.id,s.sname,s.ssex from class c,stu
        s where c.cid = s.cid and c.cid = #{cid};
    </select>
</mapper>

```

- test层

```

@org.junit.Test
//多表链接查询
public void findClsByCidTest(){
    Clas clas =clasMapper.findCidByCid(1);
    System.out.println(clas);
}

```

- 当当

- 多表单独查询

- dao层

- 接口

- StudentMapper

```
public interface StudentMapper {  
    //查询:根据cid获取学生信息  
    public List<Student> findStuByCid();  
}
```

- ClasMapper

- 实现

- StudentMapper.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">  
<!--接口-->  
<mapper namespace="org.lanqiao.dao.StudentMapper">  
    <select id="findStuByCid" resultType="Student">  
        select * from stu where cid = #{cid};  
    </select>  
</mapper>
```

- ClasMapper.xml

```
<mapper namespace="org.lanqiao.dao.ClasMapper">  
    <!--<resultMap id="clasAndstu" type="Clas">&lt;!&dash;  
    即:clas类中,属性的映射&dash;&gt;  
        <id column="cid" property="cid"></id>  
        <result column="cname" property="cname">  
</result>&lt;!&dash;在其中包含一个集合&dash;&gt;  
        &lt;!&dash;设置关联的集合属性,即:student类,属性的映射  
&dash;&gt;  
        <collection property="studentSet"  
ofType="Student">&lt;!&dash;属性,对应的类型&dash;&gt;  
            <id column="id" property="id"></id>  
            <result column="sname" property="sname">  
</result>  
                <result column="ssex" property="ssex">  
</result>  
            </collection>  
        </resultMap>  
        <select id="findCidByCid" resultMap="clasAndstu">/*结果如何  
去映射,映射一个实体*/  
            select c.cid,c.cname,s.id,s.sname,s.ssex from class  
c,stu s where c.cid = s.cid and c.cid = #{cid};  
        </select>-->  
        <resultMap id="clsAndStu" type="org.lanqiao.pojo.Clas">  
            <id column="cid" property="cid"></id>
```



```

        <result column="cname" property="cname"></result>
        <collection property="studentSet" ofType="Student"
select="org.lanqiao.dao.StudentMapper.findStuByCid"
column="cid">
            <id column="id" property="id"></id>
            <result column="sname" property="sname"></result>
            <result column="ssex" property="ssex"></result>
        </collection>
    </resultMap>
    <select id="findCidByCid" resultMap="clsAndStu">
        select * from class where cid = #{cid};
    </select>
</mapper>

```

- 当当
 - 多对一
 - 多表链接查询
 - pojo层

```

public class Student {
    private int id;
    private String sname;
    private int sage;
    private String ssex;
    private int cid;
    //学生关联班级：添加一个班级属性
    private Clas clas;

    public Student(){

    }

    ...
    ...
}

public class Clas {
    private int cid;
    private String cname;

    public Clas(){

    }

    ...
    ...
}

```

- dao层
 - StudentMapper类

```
//查询: 根据sid获取学生信息, 包括他的班级信息
public Student findStuBySid(int id);
```

- StudentMapper.xml

```
<!--查询: 一对多: 根据sid查询学生信息包括学生的班级信息-->
<resultMap id="stuAndCls" type="org.lanqiao.pojo.Student">
    <id column="id" property="id"></id>
    <result column="sname" property="sname"></result>
    <result column="sage" property="sage"></result>
    <result column="ssex" property="ssex"></result>
    <!--设置关联的集合属性, 即: Clas类, 属性的映射-->
    <association property="clas" javaType="Clas">
        <id column="cid" property="cid"></id>
        <result column="cname" property="cname"></result>
    </association>
</resultMap>
<select id="findStuBySid" resultMap="stuAndCls">
    select s.id,s.sname,s.sage,s.ssex,c.cid,c.cname from stu
s,class c where s.cid = c.cid and s.id = #{id};
</select>
```

- test层

- test类

```
@org.junit.Test
//多表链接查询: 多对一
public void findStuBySidTest(){
    Student student =studentMapper.findStuBySid(2);
    System.out.println(student);
}
```

- 多表单独查询

- dao层

- StudentMapper类

```
//单表查询: 根据sid获取学生信息, 包括他的班级信息
public Student findStuBySids(int id);
```

- StudentMapper.xml

```
<!--单表查询-->
<resultMap id="stuToCls" type="Student">
    <id column="id" property="id"></id>
    <result column="sname" property="sname"></result>
    <result column="sage" property="sage"></result>
    <result column="ssex" property="ssex"></result>
    <!--设置关联的集合属性, 即: clas类, 属性的映射-->
```

```

        <association property="clas" javaType="Clas"
select="org.lanqiao.dao.ClasMapper.findCidByCid" column="cid">
            <id column="cid" property="cid"></id>
            <result column="cname" property="cname"></result>
        </association>
    </resultMap>
    <select id="findStuBySids" resultMap="stuToCls">
        select id,sname,sage,ssex from stu where id = #{id};
    </select>

```

■ test层

```

@org.junit.Test
//单表查询: 多对一
public void findStuBySidsTest(){
    Student student = studentMapper.findStuBySids(2);
    System.out.println(student);
}

```

- 多对多
- 延迟加载
- 查询缓存
 - 一级缓存
 - 二级缓存
 - 验证增删改对二级缓存的影响
 - 二级缓存关闭
 - 级缓存的使用原则

4、当当