JDBC

1. oracle数据库连接方式：
2. 纯java驱动连接oracle：
3. 使用纯Java驱动连接到Oracle 9i数据库，加载驱动程序应改成如下语句：
4. Class.forName("oracle.jdbc.driver.OracleDriver");
5. 连接字符串应如下格式：
6. "jdbc:oracle:thin:@服务名或IP:1521:数据库名"

(6)Connection con = DriverManager.getConnection("jdbc:oracle:thin:@127.0.0.1:1521:ORA", "scott", "tiger");

**package** cn.jdbcconn;

**import** java.sql.Connection;

**import** java.sql.Driver;

**import** java.sql.DriverManager;

**import** java.sql.SQLException;

**import** oracle.jdbc.driver.OracleDriver;

**import** org.junit.Test;

**public** **class** ConnectionTest {

**private** String user = "scott";

**private** String password = "tiger";

**private** String url = "jdbc:oracle:thin:@127.0.0.1:1521:orcl";

@Test

**public** **void** jdbcConn1(){

//直接加载驱动

Driver driver = **new** OracleDriver();

//注册驱动

**try** {

DriverManager.*registerDriver*(driver);

//建立连接

Connection conn = DriverManager.*getConnection*(url, user, password);

System.*out*.println(conn);

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

}

@Test

**public** **void** jdbcConn2(){

**try** {

//通过类的字节码加载驱动

Class.*forName*("oracle.jdbc.driver.OracleDriver");

//建立连接

Connection conn = DriverManager.*getConnection*(url, user, password);

System.*out*.println(conn);

} **catch** (ClassNotFoundException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

}

}

2：练习:

1.使用jdbc创建一张员工表

员工表字段：编号，姓名，性别，年龄，职位，邮箱，电话

2.使用jdbc对员工表执行以下操作：

1）插入一条数据

2）修改一条数据

3）删除一条数据

4）查询并打印所有员工数据

使用Preperstatement

**package** cn.hn.jdbcpractice;

**import** java.sql.Connection;

**import** java.sql.PreparedStatement;

**import** java.sql.ResultSet;

**import** java.sql.Statement;

**import** java.sql.SQLException;

**import** org.junit.Test;

**import** cn.hn.jdbcutil.JdbcUtil;

**public** **class** JdbcDemo01 {

@Test

/\*创建表\*\*/

**public** **void** createTable(){

Connection conn = **null**;

java.sql.Statement state =**null**;

**try** {

//建立连接对象

conn= JdbcUtil.*getConn*();

//创建语句对象

state = conn.createStatement();

//执行sql语句

String table = "create table empo2 (eNo int,eName varchar(25),eSex varchar(2),eAge int,eJob varchar(40),eEmail varchar(90),eTel number)";

**int** count = state.executeUpdate(table);

System.*out*.println(count);

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}**finally**{

//关闭资源

JdbcUtil.*close*(**null**, state, conn);

}

}

@Test

/\*给表添加数据\*\*/

**public** **void** addInfIntoTable(){

String name ="winer";

**int** eNo =15;

Connection conn = JdbcUtil.*getConn*();

Statement state = **null**;

**try** {

state = conn.createStatement();

String insert = "insert into empo values('"+(eNo)+"','"+name+"','男',15,'公务员','34343@631.com',123456789)";

**int** count = state.executeUpdate(insert);

System.*out*.println(count);

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}**finally**{

JdbcUtil.*close*(**null**, state, conn);

}

}

@Test

/\*修改表中的数据\*\*/

**public** **void** updateInfIntoTable(){

Connection conn = JdbcUtil.*getConn*();

Statement state= **null**;

**try** {

state = conn.createStatement();

String update = "update empo set eName='mary' where eNo = 15 ";

System.*out*.println(state.executeUpdate(update));

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}**finally**{

JdbcUtil.*close*(**null**, state, conn);

}

}

@Test

/\*删除表中的数据\*\*/

**public** **void** deleteInfFromTable(){

Connection conn = JdbcUtil.*getConn*();

Statement state = **null**;

**try** {

state = conn.createStatement();

String delete = "delete from empo where eName = 'jackson'";

System.*out*.println(state.executeUpdate(delete));

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **finally**{

JdbcUtil.*close*(**null**, state, conn);

}

}

@Test

/\*查询表中的数据\*\*/

**public** **void** selectInfFromTable(){

Connection conn = JdbcUtil.*getConn*();

Statement state = **null**;

ResultSet result = **null**;

**try** {

state = conn.createStatement();

String select = "select \* from empo ";

//把查询的结果放到结果集对象中

result = state.executeQuery(select);

//结果的操作

**while**(result.next()){

**int** eNo = result.getInt(1);

String eName = result.getString(2);

String eSex = result.getString(3);

**int** eAge = result.getInt("eAge");

String eJob = result.getString(5);

String eEmail = result.getString(6);

String eTel = result.getString(7);

System.*out*.println("员工编号:"+eNo+"\t"+"员工姓名:"+eName+"\t"+"员工性别:"+eSex+"\t"+"员工年龄:"+eAge+"\t"+"员工职位:"+eJob+"\t"+"员工邮箱："+eEmail+"\t"+"员工电话："+eTel);

}

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **finally**{

JdbcUtil.*close*(result, state, conn);

}

}

@Test

**public** **void** insertInfIntoTable1(){

Connection conn = JdbcUtil.*getConn*();

PreparedStatement ps = **null**;

**int** eNo = 102;

String insert ="insert into empo values(?,?,?,?,?,?,?)";

**try** {

ps = conn.prepareStatement(insert);

ps.setInt(1, eNo);

ps.setString(2, "rose");

ps.setString(3, "女");

ps.setInt(4, 19);

ps.setString(5, "项目经理");

ps.setString(6, "243354@163.com");

ps.setString(7, "123345456");

System.*out*.println(ps.executeUpdate());

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **finally**{

JdbcUtil.*close*(**null**, ps, conn);

}

}

@Test

/\*通过预编译的方式来修改表中的数据\*\*/

**public** **void** updateInfFromTable1(){

Connection conn =JdbcUtil.*getConn*();

PreparedStatement ps = **null**;

String name ="xiaoli";

String update = "update empo set eName= ? where eNo=?";

**try** {

//产生预编译的语句对象

ps = conn.prepareStatement(update);

//设计参数

ps.setInt(2, 102);

ps.setString(1, name);

System.*out*.println(ps.executeUpdate());

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **finally**{

JdbcUtil.*close*(**null**, ps, conn);

}

}

@Test

/\*通过预编译的房来删除表中的数据\*\*/

**public** **void** deleteInfFromTable1(){

Connection conn =JdbcUtil.*getConn*();

PreparedStatement ps = **null**;

//带有参数的sql语句需要用prepareState对象

String delete = "delete from empo where eNo=?";

**try** {

ps = conn.prepareStatement(delete);

ps.setInt(1, 102);

System.*out*.println(ps.executeUpdate());

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **finally**{

JdbcUtil.*close*(**null**, ps, conn);

}

}

@Test

/\*通过预编译的的方式增加表的数据\*\*/

**public** **void** addInfIntoTable1(){

Connection conn = **null**;

PreparedStatement ps = **null**;

conn = JdbcUtil.*getConn*();

String insertSql = "insert into empo values (?,?,?,?,?,?,?)";

**try** {

ps = conn.prepareStatement(insertSql);

ps.setInt(1, 123);

ps.setString(2, "nike");

ps.setString(3, "男");

ps.setInt(4, 19);

ps.setString(5, "项目经理");

ps.setString(6, "12434@163.com");

ps.setInt(7, 123679334);

System.*out*.println("更改的行数"+ps.executeUpdate());

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **finally**{

JdbcUtil.*close*(**null**, ps, conn);

}

}

}

**package** cn.com.util;

**import** java.io.IOException;

**import** java.io.InputStream;

**import** java.sql.Connection;

**import** java.sql.DriverManager;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** java.sql.Statement;

**import** java.util.Properties;

工具类：

**public** **final** **class** JdbcUtil {

**private** **static** String *url*;

**private** **static** String *user*;

**private** **static** String *password*;

**private** **static** String *driver*;

/\*私有的构造\*\*/

**private** JdbcUtil(){

}

/\*静态块读配置文件和获取驱动类的字节码\*\*/

**static**{

**try** {

Properties pro = **new** Properties();

InputStream is = JdbcUtil.**class**.getResourceAsStream("\\db.properties");

pro.load(is);

*url* = pro.getProperty("url");

*user* = pro.getProperty("user");

*password* = pro.getProperty("password");

*driver* = pro.getProperty("driver");

Class.*forName*(*driver*);

} **catch** (ClassNotFoundException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **catch** (IOException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

}

/\*建立连接对象的方法\*\*/

**public** **static** Connection getConn(){

Connection conn = **null**;

**try** {

conn = DriverManager.*getConnection*(*url*,*user*,*password*);

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

**return** conn;

}

/\*释放资源\*\*/

**public** **static** **void** close(ResultSet res,Statement state,Connection conn){

**if**(res!=**null**){

**try** {

res.close();

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

}

**if**(state!=**null**){

**try** {

state.close();

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

}

**if**(conn!=**null**){

**try** {

conn.close();

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

}

}

}

事务处理：

事务4大特性：1:原子性：组成事务的操作要么不执行，要么全部执行。

2：独立性：多个事务之间不能访问。

3：一致性：数据库操作的前后是完全一致的。事务操作过程中，保持一致性状态。

4：持久性：事务一旦提交成功，对数据的更改反映到数据库中。

练习1：通过java程序来控制事件：

**package** cn.com.accountdao;

**import** java.sql.Connection;

**import** java.sql.PreparedStatement;

**import** java.sql.SQLException;

**import** java.sql.Savepoint;

**import** cn.util.JdbcUtil;

**public** **class** AccountDAO {

**public** **void** truncAccount(){

Connection conn = **null**;

**try** {

//建立连接

conn = JdbcUtil.*getConn*();

//手动提交

conn.setAutoCommit(**false**);

} **catch** (SQLException e2) {

// **TODO** Auto-generated catch block

e2.printStackTrace();

}

PreparedStatement ps = **null**;

//初始化要执行的语句。

String j\_sql = "update U\_Account set u\_money = u\_money+500 where u\_name ='jack'";

String m\_sql = "update U\_Account set u\_money = u\_money-500 where u\_name ='mary'";

**try** {

//创建prepareState对象。

ps = conn.prepareStatement(j\_sql);

//执行sql语句

ps.executeUpdate();

ps = conn.prepareStatement(m\_sql);

ps.executeUpdate();

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

**try** {

conn.rollback();//回滚

} **catch** (SQLException e1) {

// **TODO** Auto-generated catch block

e1.printStackTrace();

}

} **finally**{

**try** {

conn.commit();//提交

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

JdbcUtil.*close*(**null**, ps, conn);

}

}

**public** **void** truncAccountSavaPoint(){

Connection conn = **null**;

Savepoint sp = **null**;

**try** {

//建立连接

conn = JdbcUtil.*getConn*();

//手动提交

conn.setAutoCommit(**false**);

} **catch** (SQLException e2) {

// **TODO** Auto-generated catch block

e2.printStackTrace();

}

PreparedStatement ps = **null**;

//初始化要执行的语句。

String j\_sql = "update U\_Account set u\_money = u\_money+500 where u\_name ='jack'";

String m\_sql = "update U\_Account set u\_money = u\_money-500 where u\_name ='mary'";

**try** {

//创建prepareState对象。

ps = conn.prepareStatement(j\_sql);

//执行sql语句

ps.executeUpdate();

ps = conn.prepareStatement(m\_sql);

ps.executeUpdate();

//建立切入点

sp= conn.setSavepoint();

String j\_sql1 = "update U\_Account set u\_money = u\_money+500 where u\_name ='jack'";

String m\_sql1 = "update1 U\_Account set u\_money = u\_money-500 where u\_name ='mary'";

ps = conn.prepareStatement(j\_sql1);

ps.executeUpdate();

ps = conn.prepareStatement(m\_sql1);

ps.executeUpdate();

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

**try** {

conn.rollback(sp);//回滚到切入点

} **catch** (SQLException e1) {

// **TODO** Auto-generated catch block

e1.printStackTrace();

}

} **finally**{

**try** {

conn.commit();//提交

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

JdbcUtil.*close*(**null**, ps, conn);

}

}

}

Java程序中批处理数据：

练习：

**package** cn.bath;

**import** java.sql.Connection;

**import** java.sql.PreparedStatement;

**import** java.sql.SQLException;

**import** java.sql.Savepoint;

**import** java.util.List;

**import** cn.beans.Account;

**import** cn.util.JdbcUtil;

**public** **class** AccountDAO {

**public** **void** truncAccount(List<Account> account){

Connection conn = **null**;

PreparedStatement ps = **null**;

//建立连接

conn = JdbcUtil.*getConn*();

//初始化要执行的语句。

String insertSql = "insert into u\_account (u\_name,u\_money) values (?,?)";

**try** {

//创建prepareState对象。

ps = conn.prepareStatement(insertSql);

//执行批处理

**for**(**int** i =0; i<account.size();i++){

ps.setString(1, account.get(i).getuName());

ps.setDouble(2, account.get(i).getuMoney());

//加入批处理

ps.addBatch();

**if**(i%5==0){

ps.executeBatch();

ps.clearBatch();

}

}

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **finally**{

JdbcUtil.*close*(**null**, ps, conn);

}

}

}

**package** cn.bath;

**import** java.util.ArrayList;

**import** java.util.List;

**import** org.junit.Test;

**import** cn.beans.Account;

**public** **class** App {

AccountDAO dao= **new** AccountDAO();

@Test

**public** **void** test1(){

List<Account> list = **new** ArrayList<Account>();

**for** (**int** i = 0; i < 30; i++) {

list.add(**new** Account("jack"+i,345.6\*(i+1)));

}

dao.truncAccount(list);

}

@Test

**public** **void** test2(){

}

}

**package** cn.beans;

**public** **class** Account {

/\*用户id\*\*/

**private** **int** id;

/\*用户账户\*\*/

**private** String uName;

/\*用户money\*\*/

**private** **double** uMoney;

**public** Account( String uName, **double** uMoney) {

**super**();

**this**.uName = uName;

**this**.uMoney = uMoney;

}

**public** Account(){

}

**public** **int** getId() {

**return** id;

}

**public** **void** setId(**int** id) {

**this**.id = id;

}

**public** String getuName() {

**return** uName;

}

**public** **void** setuName(String uName) {

**this**.uName = uName;

}

**public** **double** getuMoney() {

**return** uMoney;

}

**public** **void** setuMoney(**double** uMoney) {

**this**.uMoney = uMoney;

}

}

关联表的建立：

**package** cn.demo1.beans;

/\*

\* 部门类

\*/

**public** **class** Dept {

/\*部门号\*\*/

**private** **int** dNo;

/\*部门名\*\*/

**private** String dName;

**public** **int** getdNo() {

**return** dNo;

}

**public** **void** setdNo(**int** dNo) {

**this**.dNo = dNo;

}

**public** String getdName() {

**return** dName;

}

**public** **void** setdName(String dName) {

**this**.dName = dName;

}

}

**package** cn.demo1.beans;

/\*

\* 部门类

\*/

**public** **class** Empolyee {

/\*员工号\*\*/

**private** **int** eNo;

/\*员工姓名\*\*/

**private** String eName;

/\*部门对象\*\*/

**private** Dept dept;

**public** **int** geteNo() {

**return** eNo;

}

**public** **void** seteNo(**int** eNo) {

**this**.eNo = eNo;

}

**public** String geteName() {

**return** eName;

}

**public** **void** seteName(String eName) {

**this**.eName = eName;

}

**public** Dept getDept() {

**return** dept;

}

**public** **void** setDept(Dept dept) {

**this**.dept = dept;

}

}

**package** cn.demo1.dao;

**import** cn.demo1.beans.Empolyee;

**public** **interface** EmpDAO {

/\*员工信息保存\*\*/

**public** **void** SaveEmp(Empolyee emp);

}

**package** cn.demo1.dao;

**import** java.security.interfaces.RSAKey;

**import** java.sql.Connection;

**import** java.sql.PreparedStatement;

**import** java.sql.ResultSet;

**import** java.sql.SQLException;

**import** cn.demo1.beans.Empolyee;

**import** cn.hn.jdbcutil.JdbcUtil;

**public** **class** ImplEmpDAO **implements** EmpDAO {

@Override

**public** **void** SaveEmp(Empolyee emp) {

**int** dno = 0;

// **TODO** Auto-generated method stub

Connection conn = **null**;

PreparedStatement ps = **null**;

ResultSet res = **null**;

/\*建立连接\*\*/

conn = JdbcUtil.*getConn*();

//先加部门信息

String dept\_sql = "insert into t\_dept (dname) values(?)";

**try** {

ps = conn.prepareStatement(dept\_sql,**new** String[]{"dno"});

//设计参数

ps.setString(1, emp.getDept().getdName());

System.*out*.println(ps.executeUpdate());

//自增长指数

res = ps.getGeneratedKeys();

**while**(res.next()){

dno = res.getInt(1);

}

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

}

String emp\_sql = "insert into t\_empolyee (eno,ename) values(?,?)";

**try** {

ps = conn.prepareStatement(emp\_sql);

ps.setInt(1, emp.geteNo());

ps.setString(2, emp.geteName());

System.*out*.println(ps.executeUpdate());

} **catch** (SQLException e) {

// **TODO** Auto-generated catch block

e.printStackTrace();

} **finally**{

JdbcUtil.*close*(res, ps, conn);

}

}

}

**package** cn.demo1;

**import** org.junit.Test;

**import** cn.demo1.beans.Dept;

**import** cn.demo1.beans.Empolyee;

**import** cn.demo1.dao.ImplEmpDAO;

**public** **class** App {

ImplEmpDAO dao = **new** ImplEmpDAO();

@Test

**public** **void** start(){

Empolyee emp = **new** Empolyee();

emp.seteNo(1);

emp.seteName("开发部");

Dept dept = **new** Dept();

dept.setdName("小明");

emp.setDept(dept);

dao.SaveEmp(emp);

}

}

MVC练习：目录的包