武汉纺织大学

Web应用开发课程设计

**学 院： 数学与计算机学院**

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**成 绩：**

**完成日期： 2020年12月15日**

**1 需求分析**



按上图设计实现新闻显示页面，页面所需图片，文字均来自数据库。

# **2 系统设计**

## 2.2 ER图

数据库设计1张表，显示页面的各项内容存储表，对应的ER图如图3-1所示。

%3CmxGraphModel%3E%3Croot%3E%3CmxCell%20id%3D%220%22%2F%3E%3CmxCell%20id%3D%221%22%20parent%3D%220%22%2F%3E%3Cmysql.table%20entity.table.tableName%3D%22uses%22%20label%3D%22uses%22%20id%3D%222%22%3E%3CmxCell%20style%3D%22swimlane%3BfontStyle%3D0%3BchildLayout%3DstackLayout%3Bhorizontal%3D1%3Bhtml%3D1%3BstartSize%3D26%3BfillColor%3D%23b0e3e6%3BhorizontalStack%3D0%3BresizeParent%3D1%3BresizeParentMax%3D0%3BresizeLast%3D0%3Bcollapsible%3D1%3BmarginBottom%3D0%3BswimlaneFillColor%3D%23ffffff%3Balign%3Dcenter%3BfontSize%3D13%3BstrokeColor%3D%230e8088%3Brounded%3D0%3Bshadow%3D1%3Bcomic%3D0%3Bglass%3D0%3BgradientDirection%3Dsouth%3BgradientColor%3D%23ffffff%3B%22%20vertex%3D%221%22%20connectable%3D%220%22%20parent%3D%221%22%3E%3CmxGeometry%20x%3D%2260%22%20y%3D%2250%22%20width%3D%22310%22%20height%3D%22130%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.table%3E%3Cmysql.column%20entity.column.tableName%3D%22uses%22%20entity.column.name%3D%22userName%22%20entity.column.dataType%3D%22VARCHAR%22%20entity.column.PK%3D%22true%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimg%2Fdb%2Fkey1.png%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bid%20int%20primary%20key%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22id%22%20entity.column.datalen%3D%2220%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22NOT%20NULL%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%223%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%222%22%3E%3CmxGeometry%20y%3D%2226%22%20width%3D%22310%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3Cmysql.column%20entity.column.tableName%3D%22uses%22%20entity.column.name%3D%22chrName%22%20entity.column.datalen%3D%2220%22%20entity.column.dataType%3D%22VARCHAR%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimages%2Fspacer.gif%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bname%20varchar(10)%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22name%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.PK%3D%22false%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%224%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%222%22%3E%3CmxGeometry%20y%3D%2252%22%20width%3D%22310%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3Cmysql.column%20entity.column.tableName%3D%22uses%22%20entity.column.name%3D%22password%22%20entity.column.datalen%3D%2250%22%20entity.column.dataType%3D%22VARCHAR%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimages%2Fspacer.gif%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bname%20varchar(10)%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22chrName%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.col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ty.column.datalen%3D%22%22%20entity.column.dataType%3D%22DATETIME%22%20label%3D%22%26lt%3Bimg%20title%3D%26quot%3BPrimary%20Key%26quot%3B%20src%3D%26quot%3Bimages%2Fspacer.gif%26quot%3B%20width%3D%26quot%3B16%26quot%3B%20height%3D%26quot%3B16%26quot%3B%20align%3D%26quot%3Btop%26quot%3B%26gt%3B%26amp%3Bnbsp%3B%26lt%3Bfont%20size%3D%26quot%3B1%26quot%3B%20face%3D%26quot%3BTahoma%26quot%3B%26gt%3B%26lt%3Bspan%20style%3D%26quot%3Bfont-size%3A%2013px%26quot%3B%26gt%3B%26lt%3Bb%26gt%3Bname%20varchar(10)%26lt%3B%2Fb%26gt%3B%26lt%3B%2Fspan%26gt%3B%26lt%3B%2Ffont%26gt%3B%22%20entity.column.oldName%3D%22count%22%20entity.column.decimals%3D%22%22%20entity.column.autoIncreament%3D%22%22%20entity.column.unsigned%3D%22%22%20entity.column.bin%3D%22%22%20entity.column.ascii%3D%22%22%20entity.column.unicode%3D%22%22%20entity.column.PK%3D%22false%22%20entity.column.unique%3D%22%22%20entity.column.isNotNull%3D%22%22%20entity.column.defaultValue%3D%22%22%20entity.column.comment%3D%22%22%20entity.column.enum%3D%22%22%20entity.column.set%3D%22%22%20entity.column.enumSetValue%3D%22%22%20id%3D%2219%22%3E%3CmxCell%20style%3D%22text%3Bhtml%3D1%3BstrokeColor%3Dnone%3BfillColor%3Dnone%3BspacingLeft%3D4%3BspacingRight%3D4%3Boverflow%3Dhidden%3Brotatable%3D0%3BportConstraint%3Deastwest%3BfontSize%3D12%3BverticalAlign%3Dmiddle%3B%22%20vertex%3D%221%22%20parent%3D%2212%22%3E%3CmxGeometry%20y%3D%22182%22%20width%3D%22280%22%20height%3D%2226%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Fmysql.column%3E%3CmxCell%20id%3D%2220%22%20value%3D%221..n%22%20style%3D%22edgeStyle%3DentityRelationEdgeStyle%3BfontSize%3D12%3Bhtml%3D1%3BendArrow%3DERoneToMany%3BstrokeWidth%3D2%3BstrokeColor%3D%236c8ebf%3BexitX%3D1%3BexitY%3D0.25%3BentryX%3D0%3BentryY%3D0.5%3B%22%20edge%3D%221%22%20source%3D%224%22%20target%3D%2214%22%20parent%3D%221%22%3E%3CmxGeometry%20relative%3D%221%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3CmxCell%20id%3D%2221%22%20value%3D%221..n%22%20style%3D%22edgeStyle%3DentityRelationEdgeStyle%3BfontSize%3D12%3Bhtml%3D1%3BendArrow%3DERoneToMany%3BstrokeWidth%3D2%3BstrokeColor%3D%236c8ebf%3BexitX%3D1%3BexitY%3D0.5%3BentryX%3D0%3BentryY%3D0.5%3B%22%20edge%3D%221%22%20source%3D%228%22%20target%3D%2216%22%20parent%3D%221%22%3E%3CmxGeometry%20relative%3D%221%22%20as%3D%22geometry%22%2F%3E%3C%2FmxCell%3E%3C%2Froot%3E%3C%2FmxGraphModel%3E

图3-1 数据库ER图

## 2.3 UML类图（Class Diagram）

各类的结构及类之间的关系如图2-5所示：

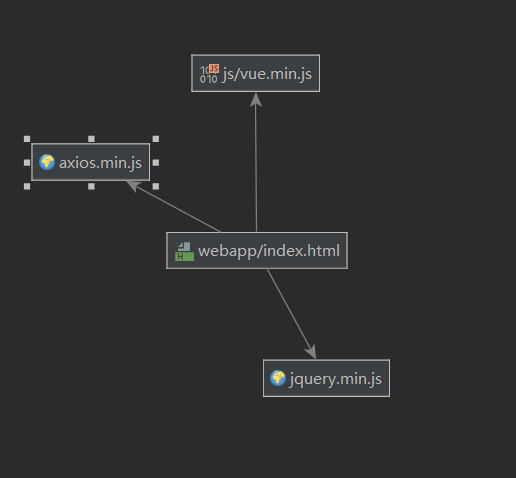
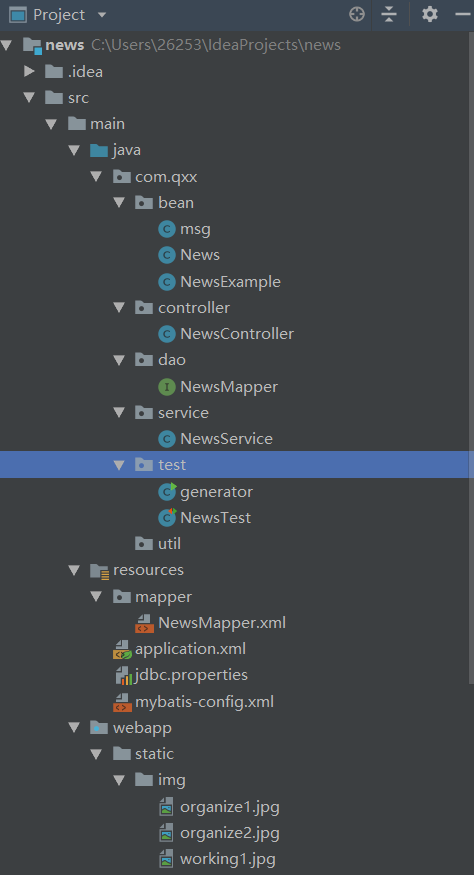


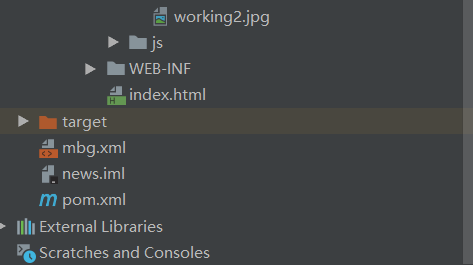
图2-5 用户功能类图

## 2.4 UML时序图（Sequence Diagram）

# **3 系统实现**

## 3.1 项目结构





## 3.2 配置文件

在项目下引入Vue的js包



### 3.2.1 jdbc.properties文件

该配置文件主要是以文件形式保存数据库的驱动类名称，连接数据库的URL地址，访问数据库的用户名及对应的密码，程序运行时会读取该文件相关信息，避免硬编码，当相关信息发生变化时，只需修改配置文件而不用修改源代码，增加程序的可扩展型。

jdbc.username=root  
jdbc.password=123456  
jdbc.url=jdbc:mysql://47.110.70.107:8081/news?serverTimezone=UTC&useUnicode=true&characterEncoding=utf8  
jdbc.className=com.mysql.jdbc.Driver

### 3.2.2 mybatis-config.xml文件

描述该文件作用，并对里面的配置进行解释

<?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="mapUnderscoreToCamelCase" value="true"/>  
 <setting name="logImpl" value="STDOUT\_LOGGING"/>  
 </settings>  
 <typeAliases>  
 <package name="com.qxx.bean"/>  
 </typeAliases>  
  
  
  
</configuration>

## 3.3 实体类News

package com.qxx.bean;  
  
import java.io.Serializable;  
  
public class News implements Serializable {  
 private Integer id;//可供查询的id  
  
 private String section;//显示的栏目  
  
 private String href;//各个栏目的连接  
  
 private Integer pid;//各栏目的显示页面父id  
  
 private String showType;//各栏目的显示方式  
  
 private String summary;//显示页面中的概括内容  
  
 private String imgSrc;//页面中的图片资源  
  
 private String artical;//相关的内容存储  
  
 private static final long *serialVersionUID* = 1L;  
  
 public Integer getId() {  
 return id;  
 }  
  
 public void setId(Integer id) {  
 this.id = id;  
 }  
  
 public String getSection() {  
 return section;  
 }  
  
 public void setSection(String section) {  
 this.section = section == null ? null : section.trim();  
 }  
  
 public String getHref() {  
 return href;  
 }  
  
 public void setHref(String href) {  
 this.href = href == null ? null : href.trim();  
 }  
  
 public Integer getPid() {  
 return pid;  
 }  
  
 public void setPid(Integer pid) {  
 this.pid = pid;  
 }  
  
 public String getShowType() {  
 return showType;  
 }  
  
 public void setShowType(String showType) {  
 this.showType = showType == null ? null : showType.trim();  
 }  
  
 public String getSummary() {  
 return summary;  
 }  
  
 public void setSummary(String summary) {  
 this.summary = summary == null ? null : summary.trim();  
 }  
  
 public String getImgSrc() {  
 return imgSrc;  
 }  
  
 public void setImgSrc(String imgSrc) {  
 this.imgSrc = imgSrc == null ? null : imgSrc.trim();  
 }  
  
 public String getArtical() {  
 return artical;  
 }  
  
 public void setArtical(String artical) {  
 this.artical = artical == null ? null : artical.trim();  
 }  
}

## 3.4接口类NewsMapper

package com.qxx.dao;  
  
import com.qxx.bean.News;  
import com.qxx.bean.NewsExample;  
import java.util.List;  
import org.apache.ibatis.annotations.Param;  
  
public interface NewsMapper {  
 long countByExample(NewsExample example);  
  
 int deleteByExample(NewsExample example);  
  
 int deleteByPrimaryKey(Integer id);  
  
 int insert(News record);  
  
 int insertSelective(News record);  
  
 List<News> selectByExampleWithBLOBs(NewsExample example);  
  
 List<News> selectByExample(NewsExample example);  
  
 News selectByPrimaryKey(Integer id);  
  
 int updateByExampleSelective(@Param("record") News record, @Param("example") NewsExample example);  
  
 int updateByExampleWithBLOBs(@Param("record") News record, @Param("example") NewsExample example);  
  
 int updateByExample(@Param("record") News record, @Param("example") NewsExample example);  
  
 int updateByPrimaryKeySelective(News record);  
  
 int updateByPrimaryKeyWithBLOBs(News record);  
  
 int updateByPrimaryKey(News record);  
}

## 3.5 服务层NewsService

package com.qxx.service;  
  
import com.qxx.bean.News;  
import com.qxx.bean.NewsExample;  
import com.qxx.dao.NewsMapper;  
import org.springframework.beans.factory.annotation.Autowired;  
import org.springframework.stereotype.Service;  
  
import java.util.HashMap;  
import java.util.List;  
import java.util.Map;  
  
@Service  
public class NewsService {  
 @Autowired  
 NewsMapper newsMapper;  
//从后端读取内容后以List的方式存储，并将List存入同一个map中  
 public Map<Integer,Object> getColumns() {  
 NewsExample newsExample = new NewsExample();  
 NewsExample.Criteria criteria = newsExample.createCriteria();  
 criteria.andPidEqualTo(0);  
 criteria.andShowTypeEqualTo("0");  
 List<News> type0List = newsMapper.selectByExample(newsExample);  
 NewsExample newsExample2 = new NewsExample();  
 NewsExample.Criteria criteria2 = newsExample2.createCriteria();  
 criteria2.andPidEqualTo(0);  
 criteria2.andShowTypeEqualTo("-1");  
 List<News> typeSpecialList = newsMapper.selectByExample(newsExample2);  
 Map<Integer,Object> map = new HashMap<>();  
 map.put(0,type0List);  
 map.put(-1,typeSpecialList);  
 return map;  
 }  
  
 public List<News> getAll() {  
 NewsExample newsExample = new NewsExample();  
 return newsMapper.selectByExample(newsExample);  
 }  
  
 public Map<Integer, Object> getSectionContent(Integer id){  
 NewsExample newsExample = new NewsExample();  
 NewsExample.Criteria criteria = newsExample.createCriteria();  
 criteria.andPidEqualTo(id);  
 criteria.andShowTypeEqualTo("1");  
 List<News> type1List = newsMapper.selectByExample(newsExample);  
 NewsExample newsExample2 = new NewsExample();  
 NewsExample.Criteria criteria2 = newsExample2.createCriteria();  
 criteria2.andPidEqualTo(id);  
 criteria2.andShowTypeEqualTo("2");  
 List<News> type2List = newsMapper.selectByExample(newsExample2);  
 Map<Integer,Object> map = new HashMap<>();  
 map.put(1,type1List);  
 map.put(2,type2List);  
 return map;  
 }  
}

## 3.5 前端页面显示层index.html

<!DOCTYPE html>  
<html lang="zh-CN">  
<head>  
 <meta charset="GB2312">  
 <script src="https://cdn.staticfile.org/jquery/1.10.2/jquery.min.js"></script>  
 <title>Title</title>  
</head>  
<style>  
 hr {  
 height: 2px;  
 border: none;  
 border-top: 2px solid darkred;  
 }  
  
 .topBtn {  
 background: #ffffff;  
 color: grey;  
 text-align: center;  
 width: 110px;  
 height: 30px;  
 margin-top: -9px;  
 border: none;  
 font-weight: bold;  
 font-size: 19px;  
 }  
  
 form {  
 border: solid 1px grey;  
 }  
 a{  
 text-decoration: none;  
 color: black;  
 }  
</style>  
<body>  
<div id="app">  
 <hr/>  
 <div>  
 <button class="topBtn" v-for="item in columnList[0]" :id="item.id" @click="changeCss($event)">{{item.section}}</button>  
 </div>  
 <div>  
 <a v-for="item in columnList[-1]" :href="item.href" style="color: darkred;position: absolute;right: 15px;top: 10px;">+<span style="color: grey">{{item.section}}</span></a>  
 </div>  
  
 <form action="" >  
 <div style="display: inline-block;" v-for="item in sectionContentList[1]">  
  
 <img :src="item.imgSrc" alt="" style="height: 180px;width: 360px;"/>  
 <span style="font-weight:bold;float: right;width: 280px;">{{item.section}}</span>  
 <br/>  
 <span style="float: right;width: 280px;margin-top: -150px;padding-top: 5px;">{{item.summary}}<br/>  
 <a style="color:indianred;float: right;width: 280px;" :href="item.href">[详细]</a>  
 </span>  
 <br/>  
  
 </div>  
 <div >  
 <a v-for="item in sectionContentList[2]" :href="item.href" style="display: inline-block;width: 650px;padding-top: 10px;">o&nbsp;{{item.section}}</a>  
 </div>  
 </form>  
 <!-- <span v-for="item in columnList[0]">{{item.section}}</span>-->  
 <!-- <span v-for="item in sectionContentList[1]">{{item.section}}</span>-->  
</div>  
</body>  
<script src="static/js/vue.min.js"></script>  
<script src="https://unpkg.com/axios/dist/axios.min.js"></script>  
<script>  
 **var** app = **new** Vue({  
 el: "#app",  
 data: {  
 columnList: [],  
 sectionContentList: [],  
 id: 1  
 },  
 methods: {  
 getColumns() {  
 **var** that = **this**;  
 axios.get("getColumns.do").then(**function** (response) {  
 console.log(response.data);  
 that.columnList = response.data.extend.columnList;  
 }  
 )  
 },  
 getContent() {  
 **var** that = **this**;  
 axios.get("getSection.do?id=" + that.id).then(**function** (response) {  
 that.sectionContentList = response.data.extend.sectionContentList;  
 })  
 },

//改变按钮显示颜色  
 changeCss(e){  
 e= e.target;  
 **var** that =**this**;  
 that.id=e.id;  
 $(".topBtn").each(**function** (index,element) {  
 **if** (that.id==element.id){  
 $(element).css("background","darkred");  
 $(element).css("color","#ffffff");  
 }  
 **else**{  
 $(element).css("background","#ffffff");  
 $(element).css("color","grey");  
 }  
 })  
 that.getContent();  
 }  
 },  
 created() {  
 **this**.getColumns();  
 **this**.getContent();  
 }  
 })  
</script>  
</html>

# **4 系统测试**



# **5 系统总结**

本次课程设计需要制作一个网页的新闻显示，对我而言还是笔记有难度。首先进行了数据库的设计。然后我找到了官网上对应的页面，并拉取了各个项的链接存入数据库中。在后来的与项目连接上出现了问题，不过经过在网上查阅资料加同学的一点帮助还是能够完成的。